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Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Stories of the Week
Beatnik Joke
Verse of the Week
Need a Spare Part?
Hot News on the Water Problem
Aloha Oe to Charley Nolan
Thoughts for the Week
Add Newspaper Boners

Stories of the Week

Jockey Billy Pearson surprised a lot of people with his knowledge of art on a TV quiz show. When he answered the $64,000 question correctly he phoned his mother long-distance.

"Yes, Billy," she answered. "I saw you on the television. You forgot to shave."

While mother underwent a physician's examination, her inquisitive little boy broke a few vials and bottles in the office.

"Please don't mind Billy," his permissive mother addressed the doctor. "He's at the destructive age, you know."

"Billy will be quiet soon," calmed the Doc. "The next row of bottles are poisons."

"Will the scar for this operation show?"

"Young woman," admonished the doctor, "that's entirely up to you."

Beatnik Joke

"Would you care to contribute to the Sioux Indians Relief Fund, Mrs. Custer?"

Verse of the Week

Ideas are very much like kids.
To that, I will attest;
Of all the others that you view,
Your own are always best!
—F. G. KERNAN.

Need a Spare Part?

Saving lives of severely burned persons by the grafting of freeze-dried skin is a remarkable new accomplishment of the U.S.A. Naval Medical School.

Application of refrigerated and stored human skin tissues have resulted in a 50% reduction in deaths from burns, the Navy reveals.

When laid on a burned area, frozen skin acts as a life-saving dressing which remains on the burn until the patient can recover from shock.

Thin slices of the victim's own skin thereafter can be taken from another part of his body and grafted on permanently.

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'Show In Print' Issue

This is a "Show In Print" issue of the NEWS. In this issue, the editors are attempting to present comprehensive coverage of the 11th Exposition of the Air Conditioning & Refrigeration Industry, and of the meetings of industry groups held in Atlantic City during the week of the Exposition.

Starting on page 30, and continuing through the issue are pages of pictures showing the new or improved products exhibited at the Show. Brief descriptions are given, and if further information is sought, contact the manufacturer or send a request to him through the NEWS. Limitations in time and space make it impossible to get all the pictures into one issue, and the remainder will be published in subsequent issues.

All of the meetings of industry groups, and the special ARI conference on trends and problems in various major applications of the industry's products, were covered by NEWS staff editors, and the "cover" stories appear in this issue. More detailed reports of some of the talks and discussions will appear in later issues.

ARI Adjusts Dues, Membership Rules To Serve Better

By Phil B. Redeker

ATLANTIC CITY, N. J.—Through the official vote of its members meeting here, the Air-Conditioning & Refrigeration Institute (ARI) took the steps to function more effectively as the industry's association of manufacturers of air conditioning and refrigeration equipment, which it has had under consideration for more than two years.

The specific changes in the by-laws will limit future applications for membership to manufacturers of products coming within the scope of one or more ARI Product Sections (present membership of firms without a Product Section affiliation is protected by a "grandfather clause"). The dues structure is also changed so as to proportion the cost of association operation more equitably among members.

These changes in organization, however, are significant

(Concluded on Page 10, Col. 1)

NCRSA Gets Tips on Business Methods

ATLANTIC CITY, N. J.—Good, meaty fare on how to improve their business operations through budgeting, establishing firm policies, increasing their value to the customer, selling small stores, sales training and supervision, and cost control was served up to commercial refrigeration distributors at the 13th annual convention of the National Commercial Refrigerator Sales Association here.

Speakers also were free with their advice to manufacturers on the advantages of working through distributors rather than selling direct. But their attacks were mellowed this year with

(Concluded on Page 39, Col. 1)

ARW To Publicize Independent Wholesaler Role

By Phil B. Redeker

ATLANTIC CITY, N. J.—With 1960 marking its 25th anniversary year, the Air-Conditioning & Refrigeration Wholesalers association is planning a program aimed at making the industry more conscious of the functions and services of the independent air conditioning and refrigeration equipment and supplies wholesaler, and will also promote in active fashion, increases in its membership.

Plans for this program were initiated at ARW's annual convention here, one of the best-attended and most enthusiastic in recent years. With new Executive Director Thom Muir taking an active role, the wholesaler group took some positive steps towards a promotion and educational program to do a better job in its relations with other segments of the industry, and in getting better recognition for the wholesalers' services.

One major step will be the

(Concluded on Page 11, Col. 1)

'BEHIND PAGE ONE' is on page 5.

At the Exposition

Mfr. Optimism Muted by Fear of Metals Shortages; Dealers See Better Products

ATLANTIC CITY, N. J.—At the 11th Exposition of the Air Conditioning & Refrigeration Industry here the week of Nov. 2 the "feeling" of manufacturers about prospects for the coming year was probably "different" than at any previous industry show.

The feeling of optimism about the prospect for sales of the industry's product was virtually unanimous. But at the same time nearly every manufacturer of unitary equipment or components seemed haunted by the fears generated by labor difficulties in the metals fields—"can I get enough material to produce a sufficient volume to satisfy the market in the next sales season?"

The some 9,000 visitors to the Exposition once again found that constant improvement is being made in the industry's products. From the standpoint of those selling and installing

(Concluded on Page 8, Col. 5)

Surface Combustion Sale Includes Janitrol Divisions

COLUMBUS, Ohio—Robin A. Bell, president of the Janitrol divisions, said that Midland-Ross Corp. of Cleveland has purchased Surface Combustion Corp., including both Janitrol divisions, located here.

The announcement follows a report made recently by Wade N. Harris, president of Midland-Ross, and Henry M. Heyn, president of Surface, that preliminary negotiations for the acquisition were in progress.

Surface will continue its present activities as a division of Midland-Ross. No changes in policies or management are contemplated, according to Harris and Heyn.

Bell said the Janitrol oper-

(Concluded on Back Page, Col. 2)

Study Changes In Exposition Location, Time

ATLANTIC CITY, N. J.—A prime topic of conversation at the 11th Exposition of the Industry here, more popularly known as the "ARI Show," was the future course that the Show will take. There are almost certain to be some changes in the traditional times and places for the Show, and there may be some major changes in the concept of the Show.

It was no secret that the number of exhibitors and the total attendance were down a fair bit from the last previous ARI Show. A spot check by this reporter in company with ARI and Show officials on the final day showed that while a great many exhibitors reported a high level of booth activity and an improved opportunity to speak with real prospects, there were a number who expressed dis-

(Concluded on Back Page, Col. 1)

Praise RSES Program As 'The Best Yet'

ATLANTIC CITY, N. J.—Good attendance and an educational program that won general praise as "the best yet" marked the 22nd annual international convention of the Refrigeration Service Engineers Society held at the Ambassador hotel here Oct. 30 to Nov. 2 in conjunction with ARI's 11th exposition.

Eleven talks presented during the four-day convention covered a wide variety of topics. In addition, there were the usual question - answer "Information Please" sessions plus such entertainment features as a "surprise party" and the annual banquet.

In a business session the society adopted a resolution which, if approved at the next annual meeting (Portland, Ore., Oct. 27-30, 1960), will raise membership dues to the International by $1. Twenty-five cents of this would be earmarked to help cover convention costs. Such an increase would eliminate the need for

(Continued on Page 4, Col. 1)

Air Conditioning Goes Far Beyond Comfort— It Delivers Good Health!

(Conscience of the Industry Editorial by George F. Taubeneck)

TO SELL air conditioning in the profitable volume it truly deserves, a new approach obviously is needed.

Comfort alone no longer is the clue. Comfort is too seasonal, ephemeral, and undependable to be assuredly profitable.

Those of us who have dedicated our lives to this business realize that *complete* air conditioning (temperature and humidity control, plus germ-and-dirt filtering) includes many positive health benefits, along with its economic justifications.

What we've needed, to put this point across to the

(Concluded on page 20)

Electric Heat, Management To Be Topics At NHAW Convention Nov. 29-Dec. 2

ST. LOUIS—Workshop panel sessions on electric heat and management will highlight the 13th annual convention of Northamerican Heating & Air-conditioning Wholesalers Association to be held at the Chase hotel here Nov. 29 to Dec. 2.

(46th annual convention of National Warm Air Heating & Air Conditioning Association will be held at the Chase-Park Plaza hotels here Dec. 2 to 4.)

The electric heat panel, to be held Monday afternoon, Nov. 30, will be moderated by Leonard H. Troehler of Brauer Supply Co., St. Louis. Harold W. Squire, president, Tiffin Art Metal Co., will conduct the management session Wednesday morning, Dec. 2.

Registration, trustees' luncheon, and an evening reception will mark the event for Sunday, Nov. 30.

Monday's program includes committee meetings, a luncheon featuring Dr. Neal Bowman of the National Association of Manufacturers, and the electric heat session.

Membership breakfast and meeting will start off Tuesday's events, followed by a business conference with manufacturers, reception, and banquet.

Following the workshop panel Wednesday morning, there'll be a luncheon with the inspirational speaker Gene Flack of Sunshine Biscuits. A meeting of new officers and trustees will conclude the convention.

Frozen Foods, Residential, Commercial, Defense Needs

Bright Future Pictured by Speakers At Conferences Staged by ARI

By C. Dale Mericle

ATLANTIC CITY, N. J.—Though problems abound, the future for air conditioning and refrigeration was probably never brighter.

This is an obvious conclusion to be drawn from the comments of four speakers discussing frozen foods, residential and commercial air conditioning, and Department of Defense needs at the special Conference Session staged by Air-Conditioning & Refrigeration Institute during the 11th exposition of the industry here.

More complete reports of the four talks presented at the ARI special Conference Session will appear in future issues of the NEWS.

Moderated by Ray K. Serfass, chairman of the ARI subcommittee in charge, the first such conference of its kind featured talks by Harold J. Humphrey, president of the National Association of Frozen Food Packers; Arthur S. Goldman, director of marketing for *House & Home* magazine; Thomas R. Casberg, mechanical engineer in charge of air conditioning, Office of Assistant Secretary of Defense, Properties and Installations, and Herman Guttman, consulting engineer in the firm of Victor Gruen & Associates.

Air conditioning and refrigeration "scientists and engineers are resourceful, so resourceful in fact, that when they found they couldn't open the window, they air conditioned the train," commented Humphrey, the lead-off speaker.

Standardized Frozen Food Handling Needed

Predicting continued gains in the sale of frozen foods, Humphrey cited, however, the need for standardized handling of the product from the processor to the consumer, particularly the importance of maintaining 0° F. temperatures all the way.

In the transportation field there were about 2,400 mechanically refrigerated freight cars in service in 1958, with another 1,400 on order, all capable to maintaining 0°, plus 34,000 refrigerated trucks handling frozen foods, only 5,000 of which can hold 0°, Humphrey said.

Freezer cabinets are being installed in retail food stores "at a greater rate than ever before," he indicated, but surveys show about a third of the markets pile foods above the frost line and that a third of the stores have no backroom storage facilities; further, not all stores with such facilities maintain them as low as 0° F.

Commercial Warehouse Space Seen Adequate

Commercial warehouse space for frozen foods is apparently adequate, Humphrey implied, and consumers now have about 11,500,000 freezers in use plus 4,500,000 lockers in addition to household refrigerators which "are built with freezer compartments as a matter of course today," he said.

Biggest gains in frozen food sales are being made by prepared products, which should increase 20% to 25% this year over 1958, according to Humphrey, who expects total frozen food production to reach nine billion pounds in the next three to four years.

Plan of Action for Residential Cooling Proposed by Speaker

Noting that residential air conditioning has not yet reached the "promised land" where it would be the No. 1 sales feature to dramatize the modern house, as has been predicted annually for several years, Goldman of *House & Home* proposed a "plan of action" for the industry.

"The most repeated charge leveled against the residential air conditioning industry is that it has been under-sold and out-sold, out-advertised," Goldman declared. "It is accused of spending most of its efforts and money stressing competitive design or price advantage instead

(Continued on Page 6, Col. 1)

KRAMER **UNICON**

WAY OUT IN FRONT and deservedly so!

KRAMER's largest UNICON has *50% more* capacity than any other! ▶ New, all aluminum casing ends rust and corrosion. Stands and structural steel are galvanized after fabrication. ▶Time-tested WINTERSTATS prevent low receiver pressure and insure start-up under any weather condition.

Available with horizontal or vertical air flow. Lowest silhouette. ▶ Kramer's UNICON is so quiet it can be used in unlimited multiples. ▶ No one can match Kramer's 20 years of accumulated know-how in air-cooled condensing and no other air-cooled condenser can match the Kramer UNICON—the pioneering leader in the industry.

WRITE FOR BULLETIN

KRAMER TRENTON CO./Trenton 5, N. J.

46 YEARS OF CONTINUOUS ACHIEVEMENT IN HEAT TRANSFER

Sutton, Two Guys Stockholders Approve Merger, To Continue Vornado Label

NEW YORK CITY — Voting at separate meetings, stockholders of O. A. Sutton Corp., Inc., Wichita, Kan., and Two Guys From Harrison, Inc., Garfield, N. J., approved merger of the two firms to form Vornado, Inc., effective immediately.

Two Guys is a discount store chain with 14 stores in New York, New Jersey, Maryland, and Pennsylvania.

Herbert Hubschman, president of the new company, said it will offer to some 40 selected dealer across the country a line of air conditioners, fans, electric stoves, and electric housewares carrying the Vornado label.

These products will be made for Vornado by other manufacturers. Hubschman said he is convinced this is the most profitable way to operate. He noted that Sutton had been producing private-label merchandise in addition to its own products but was losing money on it while manufacturer - customers were making money.

According to Hubschman, orders for Vornado products with producers will be based mainly on Two Guys' own estimate of its stores' sales potential with the products. This operational method is designed to prevent the firm being crippled with excess merchandise.

Hubschman said he expects to have at least 10,000 air conditioners ready to market by next March.

In Two Guys stores, the new Vornado line will supplant several secondary labels and some branded goods.

Announce Plans To Expand Frick

WAYNESBORO, Pa. — The new owners of the Frick Co., 107-year-old manufacturer of refrigerating, air conditioning, ice making, farm, and saw-mill machinery, met here Oct. 20 with the Frick officers to announce final details of assuming control of the company on Oct. 31.

Howard Butcher III, president of General Waterworks Corp., which earlier signed an agreement to acquire Frick, told the dinner meeting at the Anthony Wayne hotel that Frick Co. will continue operations under the same name and much the same staff but as a subsidiary of General Waterworks Corp., which has executive offices at 1506 Walnut St., Philadelphia.

He said Frick Co. would be expanded "to fill an even more important role in local and national industry."

General Waterworks owns and operates water and telephone utility properties in 20 states, together with several industrial subsidiaries making water treatment products.

The acquisition of Frick, which marks an entrance into a new field for General Waterworks, will boost the corporation's assets to about $115,000,000, Butcher said, with a gross revenue of about $35,000,000 and a consolidated net income of about $3,000,000.

D. Norris Benedict, retiring president of Frick who has been with the company for 58 years, said the General Waterworks offer was accepted by the Frick stockholders because it met their requirements for a tax-free exchange and for more liquid security of a company which would continue and expand Frick in Waynesboro.

Besides Butcher and his brother, W. W. Keen Butcher, the new board of directors for Frick includes W. H. Aubrey, A. E. Roschli, John M. Seabrook, and J. S. Stevenson, Jr.

Seabrook will serve as chairman of the board. Other company officers will be Aubrey, president; Roschli, vice president and treasurer; M. W. Garland, vice president for engineering; and M. B. Watts, secretary.

Aubrey, Roschli, and Stevenson are all presently directors of Frick. Seabrook, the only officer not now employed by Frick, was until recently president of Seabrook Farms.

American-Standard Names Hosler

DETROIT — Appointment of James W. Hosler as general sales manager has been announced by A. O'B. Andrews, president of American-Standard Industrial Div.

J. W. Hosler

Hosler is a mechanical engineering graduate of the University of Illinois. He has been with American-Standard since 1947 and has served successively as Chicago district merchandise supervisor, application engineer, merchandise department product manager, commercial air conditioning department manager, and marketing manager for air conditioning products.

Earlier this year he was promoted to marketing manager for Kewanee and Nesbitt product lines, a position he held at the time of his new appointment.

Tempromatic Expects To Be In Production By Early 1960

DE LAND, Fla.—Tempromatic Corp., a newly-formed organization, expects to be in production of heat pumps and packaged air conditioners in the early part of 1960, the firm has announced.

An 11,900-sq. ft. building now under construction here should be completed about Jan. 1.

The heat pump line will include self-contained and split system package models up to 75 tons for air-to-air, air-to-water, water-to-water, and water-to-air applications, the firm says.

A. D. Griffith is president of the new company. Other officers include Virgil W. "Tip" Tipton, first vice president; Charles E. Lowe, second vice president; Charles B. Lowe, secretary; Barbara Paulling, assistant secretary-treasurer; W. H. Moore, controller; and Robert C. Dukes, consulting engineer.

BUSINESS AS USUAL? After the A.R.I. Exposition, it's back to business as usual for some companies. New products, new merchandising ideas, new contacts and new sales techniques are too soon forgotten. But for other companies it's a much different story—for they are ever alert, responsive, and forward-looking. Such a company is Kensico. We take pride in our products. And are always looking for ways to improve our technology, our engineering capability and our customer relations. Why not try us for Size—and see for yourself? We are eager to serve you now and in the years ahead.

Our products include: hard and soft copper water tube . . . and copper tubing for air conditioning, refrigeration, instrumentation and control systems, propane gas lines, heat exchangers, automotive and industrial applications.

CAMBRIDGE, MASS. • MIDDLEBURY, CONN. • BUFFALO, N.Y. • LINDENHURST, N.Y. GOSHEN, N.Y. • ROSELLE, N.J. • PHILADELPHIA, PA. • FLOURTOWN, PA. PITTSBURGH, PA. • CLEVELAND, OHIO • DETROIT, MICH. • EVANSTON, ILL. ST. LOUIS, MO. • MILWAUKEE, WISC. • DURHAM, N.C. • FT. LAUDERDALE, FLA. ST. PETERSBURG, FLA.

Kensico Tube
COMPANY INCORPORATED, MT. KISCO, N. Y.

RSES Convention Was 'Best Yet'--

(Continued from Page 1, Col. 5)

selling advertising in the convention program booklet.

Even if the final vote is favorable, the change can't go into effect before July, 1961.

New officers elected at the convention here include:

Denver J. Wathen, Sr. of Tulsa, president; Paul E. Darby of Tacoma, Wash., first vice president; Carl F. Howenstine of Canton, Ohio, second vice president; Charles G. Bell of Fresno, Calif., treasurer; H. T. McDermott of Chicago, secretary; J. Lawrence Hall of Nashua, N. H., sergeant-at-arms; and John Spence of St. Louis, education director.

Elected to the board of directors for two-year terms were Leo Zolen of St. Paul, Minn.; Robert Duke of San Antonio, Texas; Ralph Porter of Chicago; Wilhelm L. Goeckel of Buffalo; and A. J. Pike of St. John, N. B., Can.

Lloyd M. Reed of Denver was elected to complete Hall's term as director, which still has a year to run.

Thermoelectric Refrigeration

Most popular discussion topic, which educational chairman John Spence had purposely scheduled last, was thermoelectric refrigeration. Royal S. Buchanan, who manages advance development of appliances for Westinghouse, told the group that practical and economic problems delay the production of large thermoelectric appliances like household refrigerators and room air conditioners.

"Most devices are still in the future, but the future was never so near as it is now," Buchanan declared.

Service problems with such appliances will differ somewhat from those using conventional compression refrigeration, but there'll be "no unusual problems you couldn't repair with the usual tools," he said.

Cites Causes for Problems With Milk Shake Dispensers

"Easily 50% of service calls on ice cream and milk shake dispensing freezers are due to improper operation of the equipment or problems with the mix," pointed out James H. Goodman, customer service manager for Sweden Freezer, in the first education talk of the convention.

While mechanical problems can occur, sometimes, in conjunction with the others, more often than not difficulties arise because the machine is not operated properly or the quality of the mix varies, Goodman asserted.

Suggestions on how to go about estimating and controlling job costs, primarily in commercial refrigeration installations, were offered by R. L. Eggert, Jr., of R. L. Eggert Co., East Orange, N. J. contractor.

Four basic factors involved in arriving at an estimated cost, Eggert said, include the competition's price, construction details, the cooling medium to be used, and individual job conditions.

It's not practical, and there's seldom enough time, to estimate the cost of each single item for a job, so a guide giving average costs must be employed, Eggert explained. It is therefore important, he emphasized, to keep close watch of actual costs so that the guide will be kept accurate and up to date.

In a "hard sell' type of talk that was devoted almost as much to knocking warm air systems as to the titled subject, J. W. Hall, manager of field promotion, National-U.S. Radiator Corp., discussed "Recent Advances in Hydronic Heating and Cooling."

Cost of hydronic systems is being reduced, according to Hall, by trends to copper pipe, including small pipe systems using soft copper tubing, factory-wired and assembled boilers, flexible pipe connectors, and new valves which simplify zoning.

Detailed accounts of many of the educational talks presented at the RSES convention will be published in future issues of the NEWS.

Cooling can be added to a hydronic heating system as economically as to many existing "cheap warm air systems," Hall claims.

Auto Air Conditioner Is Luxury Only Until You Own One

"Automobile air conditioning is a luxury until you own one; then it's a necessity," declared Willis Stafford, manager, sales promotion-advertising, for Detroit Controls, in another talk.

While refrigeration service problems on automobile units are generally similar to those of commercial refrigeration systems, Stafford pointed out, for example, that high temperatures under the hood or pavement heat can cause flashing of refrigerant in the liquid line with consequent difficulties.

Studies of oil migration in Refrigerant-12 and 22 systems made with the use of extra-strong glass pipe indicate the need for keeping oil concentration in the circulating refrigerant at 0.6% of weight or less, especially in low temperature systems, explained Prof. Norman Sharpe of California State Polytechnic college.

Low oil concentrations not only will improve system efficiency but will also simplify piping design, he indicated.

Compressor design has much to do with the oil migration problem, Prof. Sharpe said, but maintaining low oil concentration in low temperature systems "will usually require the use of a discharge line separator," he added.

Problems from Contaminating Gases

Problems resulting from the presence of contaminating gases in refrigeration systems and methods of cleaning systems were outlined by Dr. Walter O. Walker of the University of Miami.

Various contaminating gases were discussed by Dr. Walker, but he drew special attention to air.

"Few of us realized, at least until recently, how much trouble can be caused by air in the system," he commented.

"Heating of oil in the presence of air will produce very greasy materials, including carbon, which can ruin valves and valve plates," declared Dr. Walker, who mentioned other problems also resulting from air in the system.

In a discussion of the design, application, and servicing of large compressors, Mel Ramsey, consultant to Worthington Corp., reviewed more specifi-

Why not join the many who make H & H their headquarters for fabricated tubular parts in copper and brass; also copper coils, brass and copper straight lengths. You'll save time and money, get trouble-free quality, *always*.

cally the various types of mechanical unloaders employed with such machines to more nearly match varying loads.

Ice Maker Requirements Cited

Answering his own ear-tickling question "What Price Nice Ice," W. A. LaGrange pointed out that the true price of automatic, self-contained ice making equipment must include adequate design, a high order of salesmanship, good installation practices, regular maintenance, and intelligent service.

LaGrange is manager of automatic ice machine development engineering for Carrier Corp. He spelled out step by step what each of these requirements called for.

"Cleanliness is the most overlooked, yet one of the most important requirements for satisfactory performance of ice making units," LaGrange emphasized. He cited an instance where failure to clean an ice maker made it completely inoperative within nine months.

Knowing Fundamentals Is Serviceman's Best Tool

Ralph A. Wilkins, service manager for Acme Industries, Inc., pointed out that for the serviceman, a knowledge of the basic fundamentals of whatever areas in which he worked—refrigeration, piping, electricity, hydraulics, etc.—is the most important tool in his toolbox.

Wilkins outlined briefly the basic fundamentals of components, controls, and over-all operation of water chillers. He noted that the manufacture of packaged liquid chillers dates back only about 10 years, but in that time the number of manufacturers has ballooned from four to nearly 40. Vast improvements in efficiencies and compactness have contributed to their rapid acceptance, he added.

Don Friedman, chief engineer for Hussmann Refrigerator Co., outlined the basic principles of air-cooled condensing unit rooms for food stores. Two out of three condensing units sold to food stores today are air-cooled, he noted.

Adequate ventilation in summer, protection of compressors from cold winter temperatures, and reliable control equipment operation were the objectives of condensing unit room design, he said.

Tennessee Valley Chapter Wins P. B. Reed Award

Refrigeration Service Engineers Society presented the first annual Paul B. Reed Memorial Award to its Tennessee Valley chapter. The award will be made to the chapter with the highest percentage of certificate members to active members.

Certificate members are those who have successfully passed the RSES examination on knowledge of refrigeration service. The Tennessee Valley chapter has 10 active members and all have passed the examination.

In all, RSES has 1,791 certificate members.

Lee Whittaker of Olney, Ill. received the first McIntire award, presented by the McIntire Co. The $100 award was in recognition of outstanding contribution to the improvement of the society.

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FTC Group Seeks Better Enforcement Methods for Robinson-Patman Act

NEW YORK CITY—Appointment of a special task force to explore "methods of further stepping-up the Federal Trade Commission's vigorous enforcement of the Robinson-Patman Act" was disclosed by the agency.

In a speech delivered here before a meeting of the Grocery Manufacturers of America, Inc., FTC Chairman Earl W. Kintner announced that ten of the commission's "younger, most capable executives have been appointed to a Robinson-Patman Task Force, authorized by the commission."

The statute forbids sellers to charge customers different prices where the requisite competitive effect is present. Also, promotional allowances, and other services and facilities must be made available to competing customers on proportionally equal terms.

Other provisions prohibit customers knowingly to induce or receive discriminatory prices, and outlaw the payment or acceptance of unearned brokerage fees.

The first job for the task force is to advise the FTC how the act can be administered more effectively and its requirements "more plainly and forcefully interpreted" to businessmen.

The commission indicated the task force might consider the feasibility of staff guides showing what is legal or illegal.

Hottest number on the market

Consumers measure a product's worth by the quality you can prove for it. That's why an ever increasing number of dealers are turning to the Round Oak line of heating and air conditioning. You *can* prove Round Oak quality.

With the Round Oak line you sell quality instead of price, customer satisfaction instead of customer appeasement! Price and profit cutting can be left to your competition! You put profit back into *your* business! Round Oak offers you a complete line of quality heating and air conditioning, backs its claims of product superiority with a factory-written LIFETIME GUARANTEE for your customers, and helps you with all-out sales promotion every step of the way!

This is the kind of heating and air conditioning line you want! Let us give you complete details and prove our profit point.

Write Now!

ROUND OAK CO., INC.
DOWAGIAC, MICHIGAN

ARI Conference Sessions--

(Continued from Page 2, Col. 5)

of trying to persuade the consumer he wants air conditioning at any price.

"It is my opinion that a cooperative effort could do much to expand the residential air conditioning market. I should like to propose that the members of ARI zero in on any midwestern city where residential air conditioning has never gotten off the ground," suggested Goldman. "We would offer to help. I suspect the insulation industry, too, could be counted on to assist."

Reason Behind Indifference Would Be Sought by Survey

A three-step program was outlined by Goldman:

"1. A survey would be undertaken to find out what's behind consumer indifference and the building profession indifference in that city.

"2. Based on the survey findings, a cooperative promotion would be beamed at the community's housing professionals —architects, builders, lenders, realtors, dealers, appraisers. One of the targets would be to feature air conditioning in every model house in town.

"3. A cooperative promotion would be undertaken to see what it takes to break through residential air conditioning's No. 1 obstacle—consumer indifference.

"The cost of such a project to each participating company should be negligible," Goldman believes. "The effort could prove very fruitful. Perhaps we could even develop an effective visual status symbol that would let the neighborhood know the 'Jones' have arrived—have air conditioning."

Sees '60 as Second Biggest Housing Year

In the meantime, Goldman predicts 1960 will be the second biggest year for housing since World War II, in dollar volume, with the gain due neither to inflation or increased starts but to a greater percentage of more expensive custom-built houses. The latter offer an excellent market for air conditioning, he's convinced.

Attention of the industry was also drawn by Goldman to the boom in building of apartment houses, many of which will be air conditioned.

Defense Dept. Needs Simple, Rugged, Effective Equipment

Offering some explanations of government policies on air conditioning, Casberg pointed out that "the Department of Defense requires a large amount of air conditioning. To hold this part of defense spending to a minimum it is imperative that our systems be simple, rugged, and effective," he said.

"In this effort the Department of Defense is hopeful for the continuing support and assistance of the Air-Conditioning & Refrigeration Institute," Casberg declared.

With the value of present air conditioning and refrigeration equipment in Department of Defense fixed installations now totaling $1 billion and annual maintenance costs running $40 million, "every effort is made to hold these [maintenance and operating] costs to a minimum," Casberg emphasized.

While industry representatives frequently object to the department's policies on air conditioning, Casberg admitted, he pointed out that "the Department of Defense believes in air conditioning and its benefits."

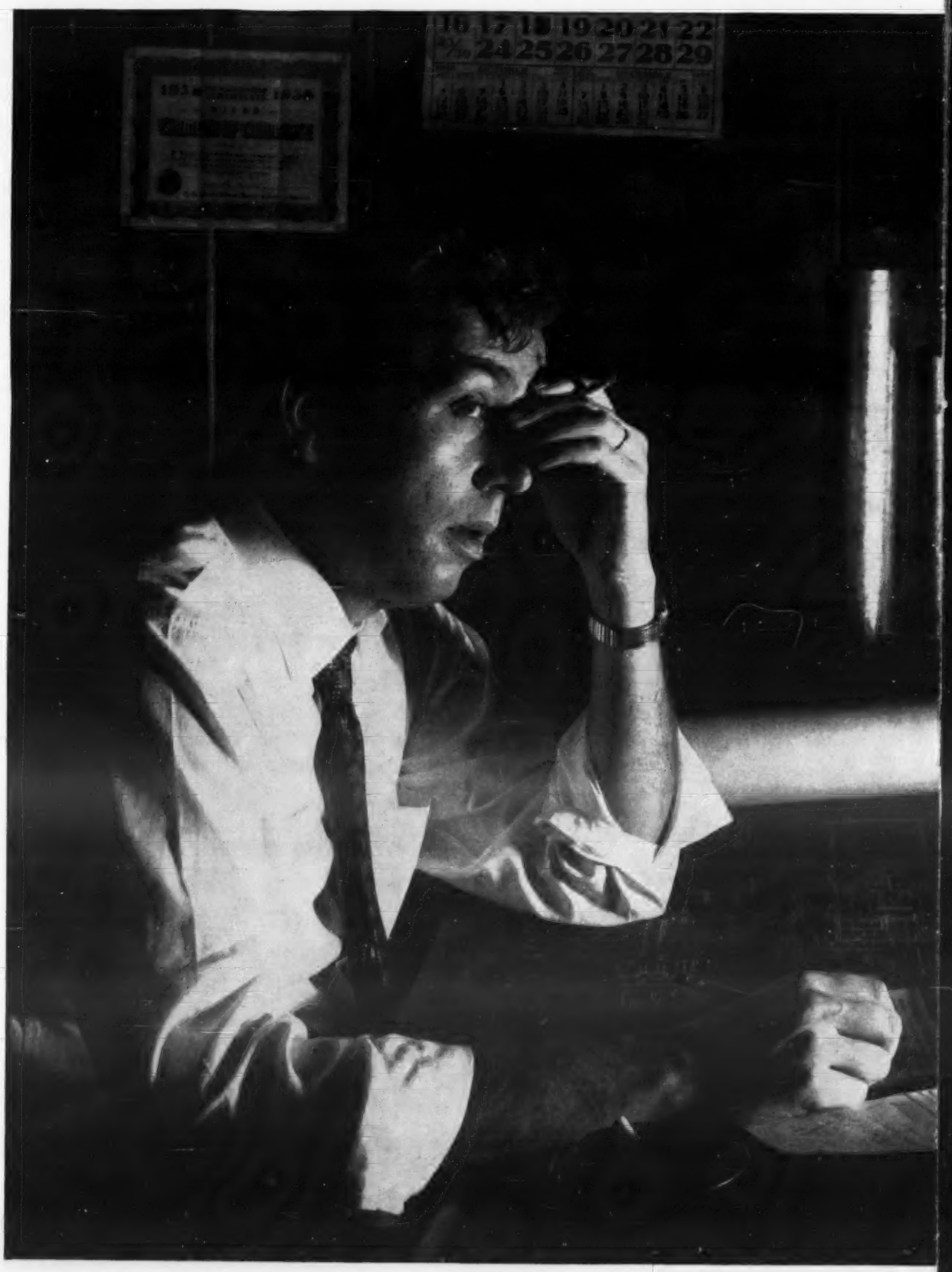
One of the consequences of the above problems and policies is to pay more attention to long-range operating and maintenance costs than to low first cost jobs, he indicated. As a result, more emphasis is placed on the larger central systems, but not to the complete exclusion of package and room type equipment, Casberg said.

"Our limitation of air conditioning in personnel living spaces has not had the concurrence of industry," he also commented. "I do not believe industry throught this problem through before criticizing this part of the policy. Since we are dealing with public funds, we are obligated to be good trustees of these funds.

"In 1955 we noted that industry leaders were stating only 2% to 3% of the homes of America were air conditioned, and, accordingly, our original policy did not permit this feature in quarters. We did not believe we could spend the taxpayer's funds for that which he did not have himself," Casberg explained.

Rapid gains in residential air conditioning since that time plus the advent of Capehart

CONFERENCE SPEAKERS (from l. to r.) are Thomas R. Casberg of the Office of the Assistant Secretary of Defense, Properties and Installations; Ray K. Serfass, chairman of the ARI conference subcommittee and moderator; Herman Guttman, consulting engineer in firm of Victor Gruen & Associates; Arthur S. Goldman, director of market research for *House & Home* magazine; and Harold J. Humphrey, president of the National Association of Frozen Food Packers.



family housing led to a policy change permitting air conditioning of quarters, which is being done now on the basis of (1) the hottest areas being air conditioned first, and (2) all personnel living quarters being treated equally, Casberg said.

Industry assistance "in the big problem of design criteria" was urged by Casberg, who observed that local architect-engineers engaged for Capehart housing often have not had too much experience with residential engineering.

"Many times there is plenty of architecture but not much engineering," he declared. "As a result there are troubles. It must be emphasized that the A-E is quickly forgotten, but your nameplate is permanently attached to your equipment and could be the object of a never-ending verbal abuse. . . .

"This is not a plea to do the design work, but it is a plea to work closely with A-E's and insist on the elimination of known application errors," Casberg said.

Air Force May Use ARI Certification In Family Housing Specs.

Favorable comments on the ARI Certification Program were made by Casberg, who also predicted, "In the near future the Air Force will probably include ARI certification in their specifications for family housing."

Commercial air conditioning's prospects, particularly in suburban shopping centers that have become so popular in recent years, were reviewed by Guttman, who described in some detail the central heat pump system serving the 800,000-sq. ft. Southdale development in Minneapolis.

Guttman decried the "do-it-yourself" philosophy regarding air conditioning which prevails in most shopping centers where the developer tells the tenant to put in his own air conditioning. The reasons for this attitude, he said, are many:

"1. No space is required for central plant equipment, and the tenant is expected to put his equipment in the valuable space he rented, or possibly on the roof.

"2. No financing is required to cover the equipment cost because the developer has little or no money invested.

"3. No operating personnel are required. . . .

"4. Leasing is simplified because rent negotiations are not complicated by discussions of stand-by charges, dry bulb, wet bulb, diversity factors, and all the mumbo-jumbo that neither the leasing agent nor the tenant can comprehend.

"5. No complaints about the air conditioning are voiced because they fall on deaf ears. As long as differences in the human metabolism exist, and until we develop a cooling system for the human body rather than the space he occupies, there will be criticism of air conditioning, but our wise developer who had nothing to do with the installation need only smile and act sympathetic."

The ingenious central heat pump system used at the Southdale development in conjunction with package equipment was described by Guttman, who commented, nonetheless:

"In spite of these achievements, the design of mechanical systems for shopping centers is still far too complicated. Provisions must be built in for those stores who stay open when the remainder of the center is closed. There are times when the mall is occupied and the stores are not. Merchandising promotions and special events require an elaborate degree of flexibility far beyond ordinary scope."

NAPC Queries Local Units on Changing Name, Qualifications

WASHINGTON, D. C. — To help the association decide on the desirability of changing its name and broadening its membership qualifications, the National Association of Plumbing Contractors has sent questionnaires to all secretaries of state and local associations.

The questionnaires are expected to reflect the local group's official position on the proposed revisions. Questionnaires are to be returned to national headquarters in time to be tabulated into a report for the January board of directors meeting.

The board will then authorize President Irvin L. Rechkemmer to send a complete report to all association officers prior to any forthcoming state conventions. State conventions will then be able to form resolutions for presentation at the national convention in Cleveland next June.

The name change questionnaire seeks to determine whether members desire to include the words heating or cooling or both in the official name of the association. It also seeks to determine in what fields other than plumbing the majority of contractors in each local area participates.

The membership qualification questionnaire seeks to determine whether members would like to include in the association warm air heating, gas and/or oil burner, sprinkler, air conditioning, refrigeration, piping, or other types of contractors.

It asks whether including these other trades would make a more effective local group and whether many present contractors would drop out if the association were so broadened.

Rechkemmer noted that a survey conducted by an outside organization based on a 38% return from NAPC members indicated that 76% of members engage in hot water heating, 35% in hot air heating, and 29% in air conditioning.

What happens when the "honeymoon" is over?

Promises come a lot easier than fulfillment!

Heating and air conditioning dealers soon find that the paid vacations and other special inducements offered by different manufacturers fade into memory along with the rose-hued words of courtship. Suddenly you're faced with the stark reality of making money with the line you're handling. What then?

That's when the "ordinary" things become all-important . . . the backing you get from the factory, the sales helps, the training schools for your men, freedom from shipping errors, the many ways a manufacturer can help you sell more efficiently and make more money.

With Lennox there are no gimmicks, no verbal smoke screens or razzle-dazzle —just an honest effort to help our dealers make money the year 'round—every year.

If *you* want help instead of promises, it will pay you to investigate Lennox now. It's the line designed for the long pull.

LENNOX Industries Inc.

Established 1895

Marshalltown, Iowa • Columbus, Ohio • Syracuse, N.Y. • Fort Worth, Texas
Salt Lake City, Utah • Decatur, Ga. • Los Angeles, Calif. • Des Moines, Iowa
Lennox Industries (Canada) Ltd. • Toronto, Montreal, Calgary and Vancouver

DOES YOUR APPLIANCE CARRY THIS SEAL of QUALITY?

The motor used in this equipment is protected against overloads, low voltage, over-voltage with a Mighty Mite Thermal Protector

MECHANICAL INDUSTRIES PRODUCTION CO.
223 Ash Street • Akron, Ohio

Does Change In AIA 'Article 20' Revise Contractor Liability for Work Defects?

WASHINGTON, D. C. — National Association of Plumbing Contractors has informed its members that it is studying a change in Article 20 of the American Institute of Architects' suggested forms for contract documents, covering liability for correction of work after final payment.

Basic change in the article is the addition of the following sentence:

"Neither the foregoing nor any provision in the contract document, nor any special guarantee time limit, shall be held to limit the contractor's liability for defects to less than the legal limit of liability in accordance with the law of the place of building."

According to NAPC, AIA says that this does not change the position of the contractor nor place any more responsibility or liability on him than existed under the old forms.

This merely calls his attention to potential liability and is, in effect, a service to the contractor in cautioning him, AIA adds.

AIA labeled as erroneous the assumption that, according to the wording of the old Article 20, after the one year guarantee period had expired the contractor could no longer be held liable for anything.

He can be sued for breach of contract during whatever period is established by the statute of limitations in the state where the building is constructed.

NAPC said that it is attempting to determine whether the new terminology creates a situation different from that existing under the old form and to learn the position of public officials around the country.

It added that it is prepared to cooperate with other construction trade associations to promote appropriate changes, if necessary.

Marsh Ups 'Bill' Ensign

SKOKIE, Ill.—W. M. Ensign has been appointed sales service manager of Marsh Instrument Co. here, division of Colorado Oil & Gas Corp.

For 11 years "Bill" Ensign has been widely known in the heating field through his activities as assistant sales manager of the Marsh Heating Div., it was noted. In his new position he will manage sales service in connection with all Marsh products.

Green Heads Sales at Viking Air Products

CLEVELAND — John A. (Jack) Green, for the past six years wholesale division sales manager, has been appointed general sales manager of the Viking Air Products, division of National-U.S. Radiator Corp.

J. A. Green

Green succeeds Dick Gang, who will become vice president of sales for the Brothers Co. of Cleveland.

As the new general sales manager, Green will direct a force of 22 factory salesmen and manufacturer representatives in their sales of Viking products through manufacturers and distributor channels from coast to coast.

Exposition--

(Concluded from Page 1, Col. 4)

the products the quality of attractiveness to the customer in the areas of better operation and improved appearance was demonstrated, but there are also important trends to compactness and ease of handling.

In compressors, for example, the trend continues to high speed models in a wider range of sizes, and this means smaller units. Also, many compressor lines have been widened in terms of models, to provide the specific categories needed for certain applications. And special compressors have also been designed for special current characteristics, or where no electric service is available.

A number and variety of changes was demonstrated in air-cooled condensers, primary aim seeming to be to provide greater flexibility in locating either self-contained or remote condensing units, and in cutting down on noise. New blowers and blower positioning were noted in some of the condensers.

Not too much in the way of new unitary air conditioning equipment came to light at the Exposition (in the case of a number of companies, new lines have not yet been introduced). However, in such lines as were shown, heat pumps took a prominent role.

In the commercial refrigeration field, some new display case designs were in evidence, and improved models of automatic icemakers (which now provide ice in almost any size, shape, or form imaginable) were prominent.

In air moving devices, both in air moving equipment and in ducting devices, improvements were shown which are aimed at providing greater volumes of air more evenly distributed and with a lower noise level.

A great variety of new tools, accessories, testing equipment, and other items to make the job easier for the installation and service mechanic was on display. These ranged from an ingenious comb for cleaning condenser surface to a 25-lb. capacity portable refrigerant dehydrating and charging unit, and from sound tracing equipment to a variety of moving and handling items.

New and improved models of controls, valves, and filter driers were in evidence, designed to handle all types of refrigerants, special applications, heat pumps, in fact, any type of job that any engineer has been able to develop up to this time. Trend in controls seems to be towards eliminating the "human element" in setting and adjusting the control device.

(Pictures and details on many of the new items shown are published in this issue, and it is likely that additional material of this type will appear in subsequent issues.)

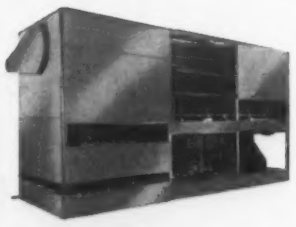
Trane Names Mirov

LA CROSSE, Wis.—Kenneth C. Mirov has been promoted from assistant manager to manager of the Trane San Francisco office, W. D. Graham, Jr., vice president, sales offices, The Trane Co. announced recently.

CITIES SERVICE OIL COMPANY — ROMA WINE COMPANY — ALLEN B. DUMONT LABORATORIES, INC. — AMERICAN AIRLINES, INC. — GENERAL SERVICES ADMINISTRATION — J. M. FIELDS STORES — U. S. ARMY — FROZEN RITE, INC. — PACIFIC TELEPHONE & TELEGRAPH COMPANY — TEXAS FASTENER CORPORATION — RONEY PLAZA HOTEL — UNIVERSITY OF SOUTHERN CALIFORNIA — PHILLIPS PETROLEUM COMPANY — CHICAGO BRIDGE & IRON — GENERAL ELECTRIC — ATLANTIC & PACIFIC TEA COMPANY — ROBERT HALL CLOTHIERS — HUMBLE OIL COMPANY — OLIN MATHEISON — LOCKHEED AIRCRAFT AREOJET — SYLVANIA ELECTRIC — F. W. WOOLWORTH COMPANY — KAISER ENGINEERING CORPORATION — U.S. NAVY SAFEWAY STORES — CONVAIR — ATOMIC ENERGY COMMISSION — CONTINENTAL BAKING COMPANY — REPUBLIC AVIATION — FOOD FAIR STORES — NATIONAL CASH REGISTER — BURROUGHS CORPORATION — FEDERAL HOUSING ADMINISTRATION — EDISON COMPANY — RAND McNALLY & COMPANY — MINNESOTA MINING & MANUFACTURING BANK OF AMERICA — U.S. AIR FORCE — NEW YORK — COMPANY — FRANKLIN STORES — NATIONAL FOOD STORES — CENTRAL CASUALTY INSURANCE COMPANY — C COMPANY — PACIFIC GAS & ELECTRIC — RADIO CORPORATION OF A — KY LAGER BREWING GENERAL — T STORES SEARS & I — STATE FARM INS — MUZAK CORPORA — PORATION BOND STO — NSURANCE COMPANY — REFINING COMPANY — COMPANY COMPANY NEW ENGLAND TELEP — LONIAL STORES, INC. GLENN MANUFACTURING COMPANY — CURTIS WRI — EL MUNDO, INC. — U. S. PLYWOOD — FORD MOTOR COMPANY OF CANADA, LTD. — DIPLOMAT HOT — ILD CAMERA & INSTRUMENT COMPANY — AMERICAN THERMOS PRODUCTS — PACIFIC MURPHY MANUFACTURING CORPORATION — THE MAYTAG COMPANY — INTERNATIONAL BUSINESS MACHINES — NATIONAL BISCUIT COMPANY — ASIATIC PETROLEUM CORPORATION — INSULAR CHEMICAL COMPANY STANDARD LIFE & ACCIDENT COMPANY — EASTMAN KODAK COMPANY — UNIVERSITY OF OKLAHOMA — BELL AIRCRAFT MONARCH METALS WEATHERSTRIP COMPANY — McDONNELL AIRCRAFT CORPORATION — BETHLEHEM STEEL COMPANY — B-THRIFTY STORES, INC. — WAYNE PUMP COMPANY — ARMA CORPORATION — THREAD, INC. — AMERICAN OIL COMPANY TRANSCON FREIGHT LINES — AMERICAN CAN COMPANY — KANSAS CITY FIRE AND MARINE INSURANCE COMPANY — T G & Y STORES — BRITISH OVERSEAS AIRWAYS CORPORATION — RAND McNALLY & COMPANY — NEW YORK TELEPHONE COMPANY WESTERN ELECTRIC COMANY — AMERICAN MACHINE & FOUNDRY — W. T. GRANT COMPANY — PIGGLY-WIGGLY FOOD STORES J. C. PENNEY COMPANY — PENN FRUIT STORES — RUTGERS UNIVERSITY — U. S. MARINE CORPS — HOWARD JOHNSON'S KROGER COMPANY — CIVIL AERONAUTICS ADMINISTRATION — E. I. DuPONT De NEMOURS & COMPANY — SAHARA HOTEL

GOVERNAIR

GOVERNAIR PRODUCTS ARE NOW IN USE
BY THESE DISTINGUISHED ORGANIZATIONS



Model SCMZ

Self-contained Multi-Zone air conditioner — one of 18 basic Self Contained equipment models, available from 3 to 120 tons.

Model GMZ

Governair also "Satisfabricates" a complete line of Vertical, Horizontal and Multi-Zone Air Handling Units.

"SATISFABRICATED"©

. . . that's the copyrighted term that describes Governair air conditioning . . . equipment which is so basically flexible in design, that it can be manufactured to fit almost *any* space and load requirement.

This beneficial feature, pioneered and developed by Governair, is coupled with imaginative, tested engineering and quality workmanship. The end result is an installation that's a much *wiser* dollar investment.

Write for detailed information, or consult your yellow page directory for the name of our local representative.

THE GOVERNAIR CORPORATION
4840 N. SEWELL • OKLAHOMA CITY

MILO CHAVEZ, national sales manager for air conditioning and heat pumps, introduces the 1960 Perfection heat pump line. Left to right, the new products are 5-ton self-contained heat pump, 4-ton self-contained heat pump, 5-ton remote heat pump, and the new commercial plenum accessory which includes decorative grille, adjustable louvers, and a separate filter rack.

Perfection Bows New Product Line, Merchandising Program for 1960

CLEVELAND—More than 85 Perfection air conditioning and heat pump distributors and their salesmen were introduced to a new product line and merchandising program for 1960 in a meeting held at the Tides hotel, Redington Beach, Fla.

The new line represents the broadest ever offered by Perfection Industries, division of Hupp Corp., to its distributor organization.

Following a two-day meeting of Perfection district managers, the general meeting was opened with a welcome by Carl W. Millsom, vice president of sales and advertising for Perfection.

Anthony J. DeFino, vice president of Hupp and general manager of Perfection, presented the corporate picture as it is now and as it is planned for the future.

Market Potential Analyzed

An analysis of the air conditioning and heat pump market potential was presented by Milo Chavez, national sales manager of Perfection air conditioning and heat pumps.

In his general introduction to the broadened new product line, Millsom stressed the point that Perfection air conditioning and heat pump units are specifically designed for their job, as opposed to standard units converted in the field for heat pump use. The comment previewed the introduction of new "Climate-Designed" heat pumps by Chavez.

Also included in the first-day program of the meeting were a discussion of financing by Millsom and Charles Collins of American Acceptance Corp. and a presentation of Perfection "forward trend" engineering by Daniel N. Gredys, vice president of engineering and manufacturing.

Ad Program Outlined

The new 1960 advertising and merchandising program presented by the Jaqua Advertising Agency included special "packaged" promotions to be used by distributors in building business among dealers, builders, commercial users, utilities, and consumers.

At the close of the first day of the meeting, Millsom announced a special surprise sales contest for distributor and dealer salesmen under the title of the "Go Like '60 Jamaica Holiday." Based on a point system for early 1960 sales, the contest establishes point values for husband-and-wife full week's vacation to the Caribbean island.

Following luncheon during which Millsom presented award plaques for outstanding sales performances in 1959, the remainder of the afternoon was devoted to individual distributor conferences.

The second day of the meeting was devoted to an intensive conference on application engineering, field installation, and service training, with heavy emphasis on audience participation.

Special commendation was given to distributors who had traveled considerable distances to attend the meeting. Distributors were in attendance from 38 states, with the nod for having traveled the greatest distance going to Elmer Matheson, Pasco, Wash. distributor who attended the meeting after a 3,500-mile trip.

Direct sales action at the meeting was reported by Millsom. Orders taken at the convention alone exceeded 20% of the total Perfection sales for 1959, Perfection's largest sales year in history.

Carrier Awarded $3 Million In Contracts For Absorption Units for Nuclear Subs

SYRACUSE, N. Y. — Contracts totalling $3 million to produce quiet, heat-operated cooling machines for nuclear-powered submarines have been awarded to Carrier Corp. by the U. S. Navy, it was announced here by Charles V. Fenn, Carrier vice president.

The contracts call for adaptation of Carrier's steam activated absorption refrigerating machines, used in big building air conditioning.

Delivery of the first unit is scheduled for January, 1960, for the attack submarine *Thresher,* now being built at Portsmouth, N. H., Navy yard. Following tests in this vessel, a number of additional submarines are scheduled to be similarly equipped.

The cooling machines will operate directly on steam from the nuclear reactor without requiring conversion to electricity.

"Advances in anti-submarine weapons, such as improved sonar and sound-seeking missiles, have established a new requirement for quieter equipment," Fenn said. "Absorption cooling units have few moving parts and create little vibration."

Until now, cooling units for submarine air conditioning systems have used compressors with pistons, it was noted.

The new submarine units will produce capacities ranging from 100 to 200 tons.

THE PEOPLE WHO KNOW REFRIGERATION BEST

DEPEND ON THE PEOPLE WHO KNOW TUBING BEST!

THE CLEANEST TUBING YOU CAN BUY...
UNDER PRESSURE EVERY INCH OF THE WAY!

Every inch of GM Steel Tubing is pressure-tested and cleaned. Solvent is introduced under pressure to all bulk coils, checking structural strength and assuring an I.D. free of internal residue. Then after your specifications take shape—as in the serpentines above—they are again tested under pressure to assure a clean, leak-proof tubing that will stand up under the most rigid conditions for the life of your product. Call a GM Steel Tubing Sales Engineer today. Put some of this top-quality tubing on test now. See how you can save time and money with the cleanest tubing you can buy. *Rochester Products Division of General Motors, Rochester, New York.*

GM STEEL TUBING
BY ROCHESTER PRODUCTS

AMERICA'S LARGEST MANUFACTURER OF REFRIGERATION TUBING

ARI Takes Steps To Function More Effectively--

(Concluded from page 1)

primarily in that through them ARI hopes to step up and enlarge its program of activities which its officers and directors believe will prove of great benefit not only to the membership, but to the industry generally.

More Vigorous Promotion Of Certification Program

Included in this program is more vigorous promotion of the ARI-sponsored certification program which establishes and polices compliance with product standards and ratings on unitary equipment; and also, increased promotion of the industry's products to the buying public.

Other new services contemplated include "financial, accounting, and cost studies," designed to provide some uniform system; employment of a government contact man, with an engineering background, who can meet with representatives of government agencies purchasing the industry's products; and the extending of statistical and credit activities.

While there was lively debate on the proposed changes at both this meeting, and the May meeting at which the proposals were first discussed openly by the membership, the vote was overwhelmingly in favor of them. ARI President Rudy Berg, Copeland Refrigeration Corp. vice president, reported a roll-call vote showing 94% of the votes cast being in the affirmative, with more than 80% of the membership participating in the voting.

Fiscal Year Changed

In other changes the ARI fiscal year was changed to coincide with the calendar year, starting Jan. 1, 1960. This change also calls for the annual meeting to be held between Oct. 1 and Dec. 31. Dates for the next annual meeting have been set for Nov. 27-30, 1960, at the Hollywood Beach (Fla.) hotel.

Addressing the membership in the discussion preceding the vote on the organizational changes, Russell Gray, Carrier Corp. vice president and an ARI vice president, said that he believed that the industry wanted the "strongest, most effective, and most efficient trade association" possible and were willing to pay increased costs to get the services and benefits that could be expected from that kind of an organization.

He said that the changes being made involved three principal items: one, the compulsory sharing of product-section charges; two, the right of the board of directors to allocate charges of interest to more than one section to all sections so interested in proportion to their benefits and in proportion to the sales volume of those sections; three, the principle of proportioning dues in accordance with sales volume among section members.

The board of directors has suggested that each section give immediate consideration to the manner of proportioning dues among its section members and, where there is a feeling that direct proportioning of dues would create an undesirable, or perhaps unfair situation, to come up with an alternative method. If any product sections favor a method of proportioning dues other than directly on sales volume, they are asked to develop such a plan not later than Dec. 1.

Speaking in support of the by-law amendment that calls for compulsory sharing of product-section dues, L. N. Hunter, senior vice president, National-U.S. Radiator Corp., and an ARI vice president, said that "since in its very essence, any project of any trade association should be beneficial to all members of the industry, it also appears feasible, and entirely proper, that all of the members of ARI who produce a product making them eligible for membership in a product section should contribute financially to the costs of that section's activities.

"Article VII, Section 2, states 'While membership in product sections and participation in product section activities are not compulsory, any member manufacturing a product which falls within the scope of a product section, shall be liable as dues for his proportionate share of the budget expense allocated to said product section. . . .'

"If the volume produced does not, in the opinion of the manufacturer, justify much activity within the section, then he does not have to identify himself with that section, although, of course, it is hoped he will. By the same token, in that case, as it is covered in another part of the proposed amendments, the amount of dues charged to that ARI member would be quite small, assuming low volume and should not in itself place any burden on the producer."

Westinghouse Plans Central Research Development Center In Pittsburgh Area

PITTSBURGH — Westinghouse Electric Corp. has announced plans for the creation of a centralized research and development center in the Pittsburgh metropolitan area.

The center will bring together on a single site in Churchill Borough, 10 miles from downtown Pittsburgh, all the key personnel associated with the company's broad centralized program of basic and applied research.

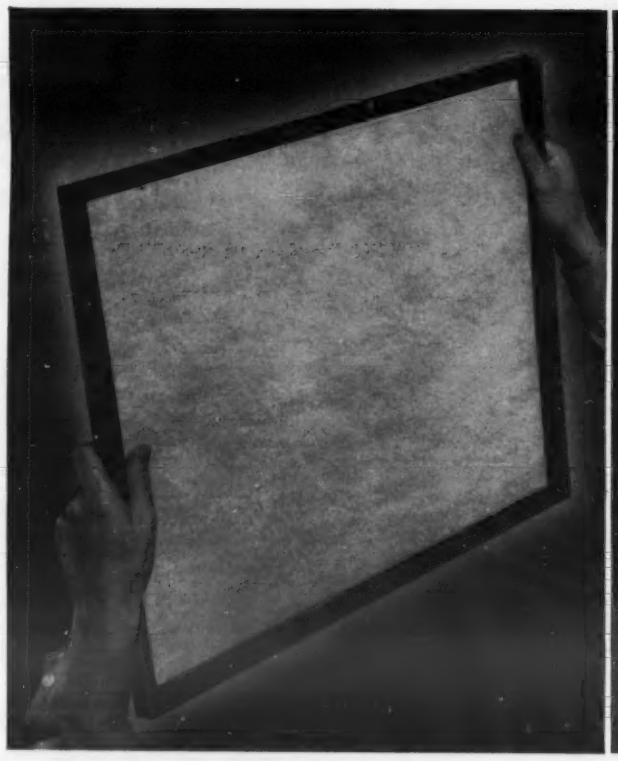
Ground will be broken early in 1960 for two new buildings to be constructed on the 100-acre site now occupied by the Westinghouse research laboratories. Full occupancy of the new facilities is scheduled for 1961.

Dr. S. W. Herwald, Westinghouse vice president, research, said that Westinghouse materials laboratories, the new products laboratories, the manufacturing planning and controls laboratories, and the patent department will join with the research laboratories to make up the new research and development center. An estimated 1,750 persons will occupy the center.

Dr. Herwald said that the new center will comprise a total of 712,000 sq. ft. of floor space and will contain some 450 individual scientific laboratories. In addition, 35 general service functions that support the work of scientists and engineers will be combined and housed on the site. Design of the new center is being done by the architectural firm of Skidmore, Owings & Merrill of Chicago.

NOW from FRAM®. . . world leader

FRAM permachem treated Air Filters



NEW FRAM
permachem treated
AIR FILTERS

Kill 99+% of the germs that breed in filters. • Stop mold, mildew, musty filter odors • Hold up to 34% more dust in AFI test procedures • Exclusive anchor-locked frame cannot settle, vibrate, blow, or soak loose • In sizes for all forced air furnaces and air conditioners, also rolls and pads.

IMMEDIATE ACCEPTANCE
BY ORIGINAL EQUIPMENT MANUFACTURERS

Eleven leading manufacturers of air conditioning equipment have already selected FRAM permachem treated Air Filters for use in their 1960 models. (Their names will be announced in December.) FRAM's sensational plus features will be promoted by these manufacturers in their sales and merchandising programs.

ARW 25th Anniversary Program--

(Concluded from page 1)

suspension of the publication of the *ARW Journal*, an association sponsored publication that operated primarily as a house organ for association members. A formal statement issued by officers of the association declared:

"The December issue will be the last issue of the *ARW Journal*.

"The officers of ARW feel that while the association learned much through the publication of the Journal, in present-day marketing it is more important for us as wholesalers to ask our manufacturer suppliers to place advertising in those publications which move goods off our shelves.

"We encourage our suppliers to continue to build their advertising to our customers."

The 25th anniversary year will be used as a basis for part of the effort aimed at putting the supply wholesaler's part in the industry into the spotlight. Tentative plans are being made for the celebration of "Wholesaler's Month," possibly in October, 1960, which date coincides with the original founding date 25 years ago, and also with the date of the 1960 convention.

1960 Convention Set for Dallas

Current plans call for the 1960 convention to be held Oct. 25-29 in Dallas, with convention headquarters to be announced at a later date.

W. C. Miessemer, Arizona Refrigeration Supply, Inc., Phoenix, is the new president of the association. E. P. Sorenson, Airo Supply Co., Chicago, is vice president; Elmer Davey, Davey Sales Co., Akron, Ohio, is secretary; and Paul Bodwell, Jr., The Bodwell Co., Inc., Harrisburg, Pa., is treasurer.

Directors elected for new terms at the meeting include: Frank Pond, Refrigeration & Industrial Supply Co., Minneapolis; Jack Tupper, Thermal Supply Co., Inc., Seattle; Harry Dawson, Acme Refrigeration Supplies, Inc., New Orleans; and Irving Fajans, Aetna Supply Co., New York City.

Executive Offices To Be In Cleveland

Executive Director Thom Muir is establishing new executive offices for the association in Cleveland.

A major recommendation by the ARW Manufacturers' Relations Committee asked for a special designation of "air conditioning and refrigeration" copper tubing.

Such tubing would be "clean, degreased, and capped," and would be marked in O.D. rather than nominal sizes.

Reason for the desire for such tubing, the wholesalers stated, is the necessity for extreme cleanliness in tubing through which refrigerant flows, and only through tubing which is given special handling, packaging, and designation can such cleanliness be assured.

It was also recommended that "air conditioning and refrigeration tubing" not be combined with "L" or "K" type tubing in price bracketing.

NEWLY elected officers of the Air-Conditioning & Refrigeration Wholesalers Association are from left to right: Paul D. Bodwell, Jr., treasurer; W. C. Miessemer, president; E. P. Sorenson, vice president; and Elmer H. Davey, secretary.

Details of Plans To Admit Mfr.-Suppliers

Details of the plan announced at the meeting whereby manufacturer-suppliers will be invited to become associate members of the ARW (as reported in the Nov. 2 issue of the NEWS) will be made known at a later date. However, at the meeting retiring ARW President Charles G. Koopman outlined the philosophy behind this associate member program.

Up to 10 years ago, Koopman said, the industry was relatively small. There was a relatively close attachment between "Boss" Wholesaler and "Boss" Manufacturer, and problems were resolved quickly.

In the early 1950's the industry experienced an explosive growth and many manufacturers grew quite large and new manufacturers entered the field.

"As wholesalers, we grew too. New product lines were constantly being added to our stock," Koopman pointed out. "In this growth, more and more duties had to be handled by 'Boss' Wholesaler and 'Boss' Manufacturer. Their knowledge of one another's problems was not as distinct as before, because they simply didn't have the time to really sit down and talk.,

"This growth meant new people coming to work for manufacturers and wholesalers. Many of these people were strange to the industry and certainly strangers to one another. Yet these people were and are responsible for setting sales policies, plans, and programs.

Close Contact Must Be Re-Established

"I'm convinced that many of the conflicts that have come about in the past few years between manufacturers and wholesalers are due to this lack of mutual understanding. To overcome this, we must re-establish a closer personal contact. For our own good and our manufacturer suppliers good, we need to know, mutually, the best directions to take in serving the trade at their customers.

"At our annual meeting, we announced our plan for associate membership in ARW. Invited manufacturers can sit with us now as associates to plan for today's and tomorrow's markets through wholesalers.

"The policy makers of wholesalers and the policy makers of manufacturers now can re-establish an intimate knowledge of one another's problems, resolve these problems, and assure one another of more profitable sales volume.

in filtration . . . the sensational new that make big profits for you!

POWERFUL ADVERTISING FEATURES THIS SEAL

Big-space ads in national magazines including THE SATURDAY EVENING POST, newspapers, and radio are telling your customers about the advantages of FRAM permachem treated Air Filters. Merchandising aids featuring FRAM permachem treated Air Filters are being used by original equipment manufacturers and are available to you.

"YOU'VE NEVER MADE SUCH PROFITS

from air filters before," says Theodore F. Low, President of Sims Corporation, Providence. "You can't miss with Fram's profitable pricing policies, selective distribution, merchandising support, and Fram's famous money-back guarantee."

GET THE FACTS TODAY! Write FRAM CORPORATION Dept. FAC Providence 16, Rhode Island

Complex Controls Included

7-Ton Space Cabin Simulator Features Built-In Atmosphere Control System

MINNEAPOLIS — Another step in space-age technology has been taken with the completion of a long-term two-man space cabin simulator at the Aeronautical Div. of Minneapolis-Honeywell.

The 7-ton device, which will be used to explore man's reaction to 30 days of simulated space flight, has been shipped to the Air Force's School of Aviation Medicine at Brooks Air Force Base, San Antonio, Texas. One of its features is a built-in atmosphere control system.

Officials at the school have disclosed that volunteer pilots have been carefully screened and a group selected from which two men will be drawn for the first U.S. experiment in long-term simulated space flight.

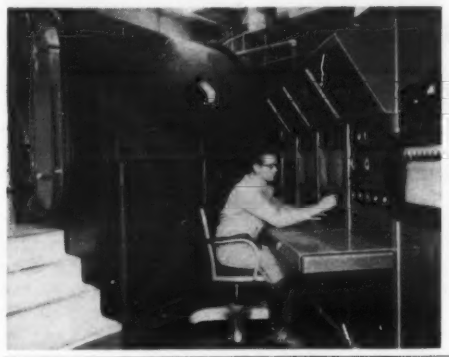
The simulator in which they will live is 8 ft. high and 12 ft. long. Within its elliptical steel walls are contained most of the comforts of home, plus a complex of scientific instruments to control environments and record the reactions of the occupants.

As a result of studies conducted with two men living in the cabin in complete isolation from the world, the Air Force hopes to gain knowledge that can be used in the design of living and working quarters in space ships of the future.

To closely approximate conditions imposed by space travel, the space cabin was designed to be virtually self-sustaining. As a result of developments at Minneapolis - Honeywell, the astronauts in the cabin with breathe and re-breathe the same air and drink and re-drink the same water.

Urine and all other forms of waste water are purified by a Honeywell-developed process which includes chemical treatment, filtering, super-heating, freezing, and final filtering through activated carbon.

Human feces and other solid wastes like hair or food particles will be dehydrated and burned in an incinerator and the gases produced are disposed of with an afterburner. All that remains from this process is a small amount of fine ash.



COMPLETION of this space cabin simulator at the Aeronautical Div. of Minneapolis-Honeywell marks the start of a new phase in space technology—the study of man's reaction to 30 days of isolation under space conditions. Two astronauts housed within it will breathe and re-breathe the same air and drink and re-drink the same water. The exterior control panel at the right monitors all functions of the cabin.

Another feature of the simulator is a built-in atmosphere control system with delicate sensing equipment to measure oxygen, carbon dioxide, nitrogen, and carbon monoxide.

A complex system of controls developed by Honeywell automatically pumps in oxygen when needed, reduces carbon dioxide through the use of chemical absorption beds, pumps in nitrogen if required, and catalytically filters carbon monoxide.

Provision was even made for an astronaut who might enjoy a smoke. The system includes a high-voltage electrostatic filter to ionize and trap dust and smoke particles.

The space capsule is provided with heating and cooling elements for temperature control, and a humidity control device that can pull moisture from the air and store it along with the water supply.

Food for the simulated trip will be non-perishable, so refrigeration is not required, but a heating element is provided to warm up soup and coffee.

The space capsule includes a panel with instruments that record environmental conditions and controls to alter these conditions. Also included are simulated space navigational controls for "flying" the capsule.

Information from the space capsule is piped outside to a highly instrumented console which will precisely record environmental conditions and occupant reaction for study by space medical researchers.

Niagara Frontier Group Holds First Regional Meeting

NIAGARA FALLS, N. Y.—Several hundred engineers came here for a three-day convention of the newly-formed Niagara Frontier Chapter, American Society of Heating, Refrigerating & Air-Conditioning Engineers.

The engineers came from 17 other chapters in New York State, New England, and parts of New Jersey. The meeting was the first regional session of the engineers, all members of two groups which merged last spring—the American Society of Heating & Air-Conditioning Engineers and the American Society of Refrigerating Engineers.

Technical papers presented included: "Applications of Thermoelectricity" by R. G. Sickert of Whirlpool Corp.; "Research Program of Our Society" by Burgess H. Jennings, the society's director of research; and "High Temperature Hot-Water Heating" by Alex Kuli, plant engineer of the Dunlop Tire & Rubber Corp.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

To Dealers and Contractors who sell and install Residential and Commercial Air Conditioning:

only **COOLERATOR** gives you this

4-POINT PROFIT PROGRAM!

The Right Equipment Alone Isn't Enough—Each Of These 4 Points Is Essential For Greater Profits:

1 QUALITY!

You can depend on Coolerator quality to protect your profits. Careful engineering, proven components, precision assembly, and *grueling testing of every unit* cut service calls and assure complete customer satisfaction. Coolerator equipment has one of the best operating records in the industry.

2 FEATURES THAT SELL!

Your salesmen have outstanding product advantages to talk about with Coolerator. To help you close sales, the amazing LECTROFILTER® is the greatest single new feature since air conditioning was introduced! Special Permalife® finish gives unmatched weather protection. Easy installation, easy service whether remote or self-contained.

3 DIRECT FROM FACTORY PURCHASING!

Coolerator dealers buy direct from the factory! This assures a much higher gross and a brighter net profit picture. Yet Coolerator's field warehousing makes it possible to work with minimum inventories. And 47 strategically located factory authorized service depots provide prompt field service when needed.

4 PROTECTED TERRITORIES!

A market area for every dealer or contractor—with territory protection—insures higher sales volume. Now, Coolerator offers you such *protected territories!* You can develop your market potential by selling quality and features—instead of price only. Every dealer knows that protected territories mean more full profit sales.

Coolerator Offers A Complete Line With Units Designed For Ease Of Installation And Service Accessibility

Self-Contained Models* 2, 3 and 4 hp sizes *Decorative fronts optional

Heat Pump Models 3 ton remote system

Remote Condenser Sections 3, 4 and 5 ton sizes

Horizontal and Vertical Coil Sections 3, 4 and 5 ton sizes

Blower-Evaporator Coil Sections* 3, 4 and 5 ton sizes

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McGRAW-EDISON COMPANY

To Improve Your Profit Picture—

MAIL THIS COUPON NOW!

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McGRAW-EDISON COMPANY • ALBION, MICHIGAN

NAME_____

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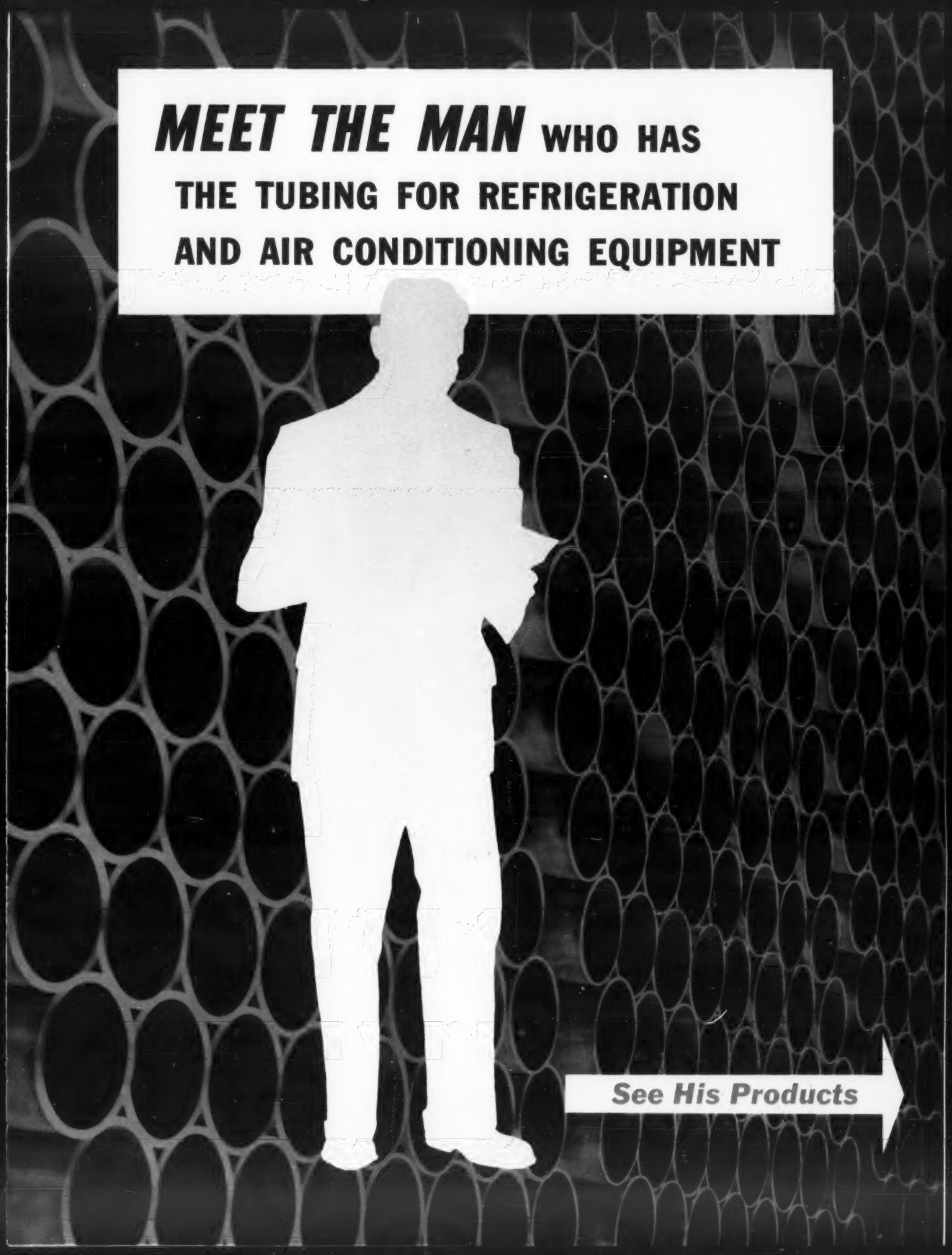
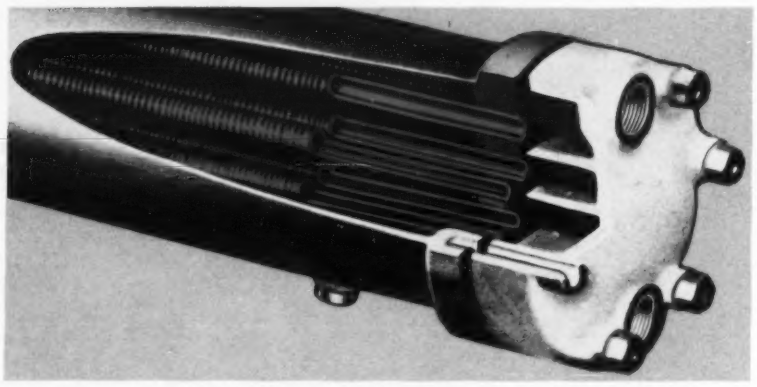

MEET THE MAN WHO HAS
THE TUBING FOR REFRIGERATION
AND AIR CONDITIONING EQUIPMENT
See His Products

THESE WOLVERINE PRODUCTS

CAN HELP YOUR COMPANY

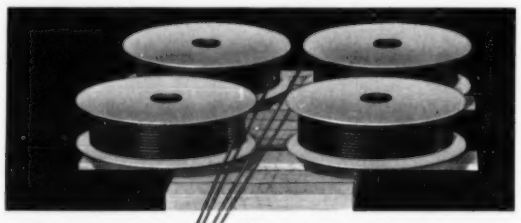
DO A BETTER JOB

Wolverine Trufin is also available with high fins—can be readily fabricated to meet your needs.

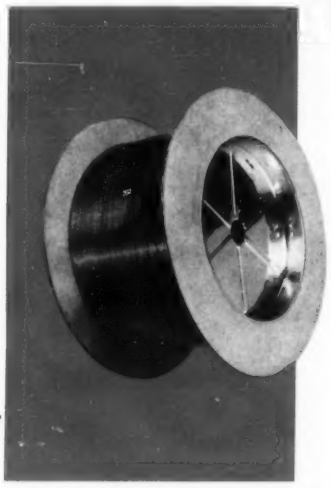


Wolverine Trufin® Type S/T—the integrally finned condenser tube for shell and tube condensers.

Wolverine Capilator® for precision metering control.



▲ Wolverine level-wound coils are ideal for feeding automatic production equipment.



Wolverine control tube is also available in handy level-wound coils. ▶

Wolverine's aluminum refrigeration assembly has aluminum to copper connections. ▶

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SALES OFFICES IN PRINCIPAL CITIES

Punch-Card System for Scheduled Maintenance Frees Skilled Mechanics from Pencil Pushing

DAYTON—Use of a mechanized punch-card system for scheduling and recording preventive maintenance will release the "skilled technician from his pencil-pushing job to perform work for which he is trained," contends Capt. Henry G. Snider of the U. S. Air Force.

"It will also allow him to work on a predetermined schedule free of the 'panic jobs' that disrupt the curve of man-hours versus available time," Capt. Snider declared in a talk before the Refrigeration and Air Conditioning Conference staged by Hq USAF at Wright-Patterson Air Force Base here.

Such a method of scheduling maintenance, however, will not actually perform the maintenance, nor can it be considered a cure-all for the problem, it was emphasized.

Its practical application, too, would seem limited to operations involving a great deal of equipment to be maintained. Similar conditions could no doubt be found, however, among large private firms with extensive maintenance contracts.

Manual Method Is 'Hit-or-Miss'

"The manual method of scheduling and recording maintenance in use today is inadequate; it is a hit-or-miss proposition. A great deal of time and effort is required to perform the task properly. In many instances, a memory method of scheduling and recording is used. This breaks down completely when there is a change of personnel," said Capt. Snider.

"In establishing a schedule such areas as equipment type, age, use factors, physical location, and configuration must be considered. The schedule is determined by the maintenance requirement and each of the above areas influence this requirement. There is a different requirement for window air conditioners, package units, direct expansion system, water chillers, and absorption units.

"Maintenance requirements for an item of equipment are directly proportional to its age; the older the unit the greater the maintenance requirements. A unit operating 24 hours per day, 365 days per year requires more maintenance than an eight-hour day, three-month operational unit. Such factors as contamination of the air handled, type of filters, length of ducts, etc., govern the extent of maintenance required.

"In establishing a schedule, each item as studied individually and the above factors considered in determining a frequency and a time of maintenance. The system does not use a blanket frequency for all units but has a great deal of flexibility which assures the proper scheduling of all maintenance," explained Capt. Snider.

"A current inventory of equipment requiring maintenance is an excellent aid to those responsible for maintenance. True, providing this inventory is not part of the mission of the maintenance section. This list is available as a by-product or bonus from the system," he also said.

"The maintenance supervisor will find that he is much better equipped to discuss maintenance requirements, manpower shortages, equipment replacements, and similar problems with his supervisors when he has such an inventory list available.

"The information fed back to the system by the maintenance man is recorded and stored for future use. Such things as expended man-hours, major maintenance performed, equipment outages, and other data can be used to establish frequency changes, equipment replacement, labor standards and other programs. The necessary information is available for a complete economic analysis of the maintenance picture.

"As yet this area is relatively unexplored. The potential is there; time and research will tap this source of information," suggested Capt. Snider.

"In establishing a mechanized scheduling system there are three distinct steps: 1. Data Conversion; 2. Key Punch; 3. Trouble Shooting.

"Data conversion is a process in which the available information pertaining to a piece of equipment or property is transferred from existing records to an interim form which will be used to produce the master record. These pieces of information are carefully selected so when assembled they will tell a complete story.

"These pieces of data must be converted from their native form to a language which will be acceptable to the electric punch card machine."

Code numbers must be used for this purpose. These, however, can readily show a wealth of details including type, size, and location of equipment, frequency of required inspection, etc.

In setting up such a system, it is essential that the data from existing maintenance records be transferred accurately and be properly coded.

One master punch-card would be used for each piece of equipment.

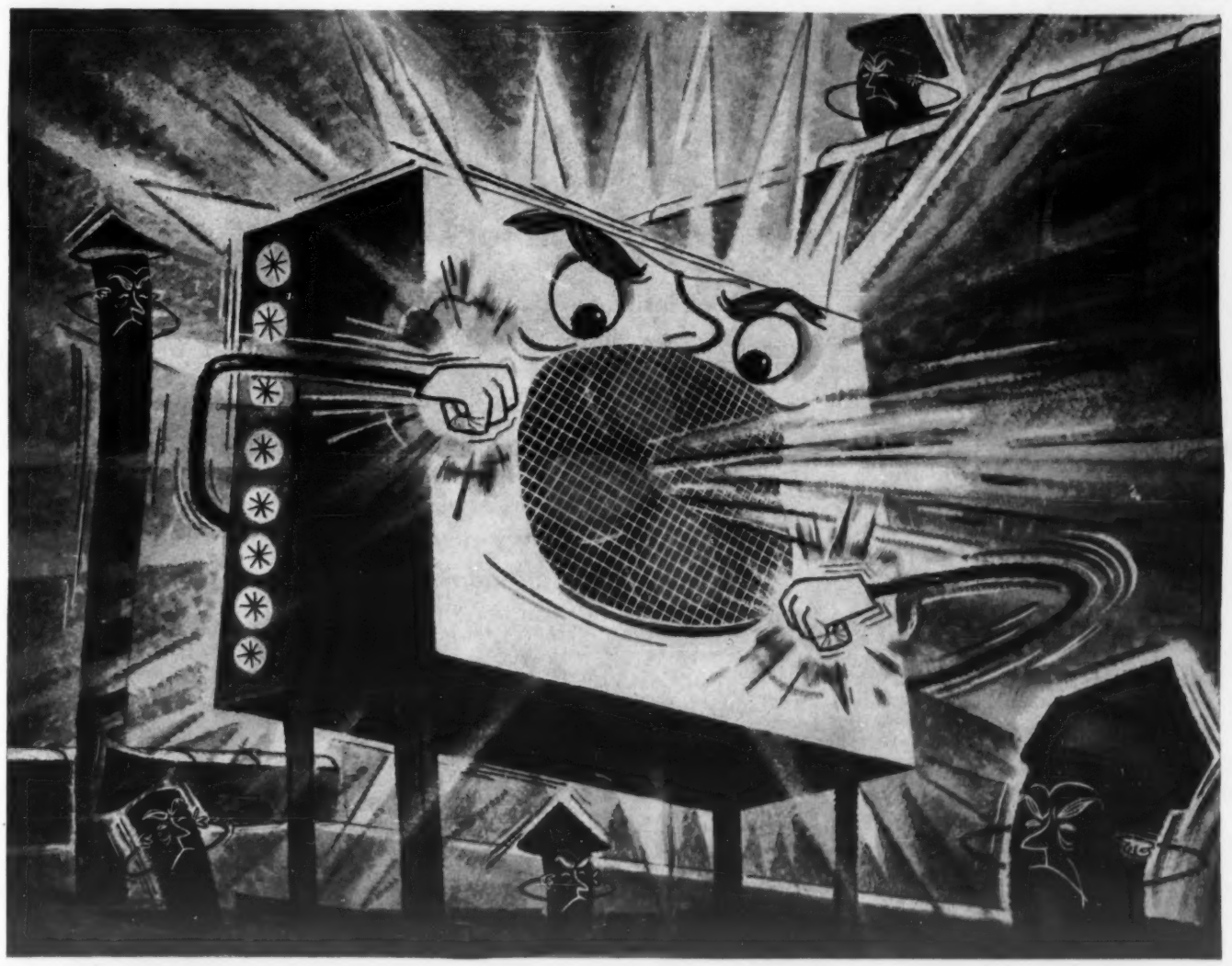
In operation such a system would be employed to set up a weekly work schedule. Prior to the beginning of a particular week, the master cards would automatically sort out cards of equipment to be inspected.

From these master cards "work cards" would be automatically reproduced and delivered to the maintenance supervisor.

The work cards are given to the individual maintenance men who note on them in code such things as time required for service, their own identification number, and the condition of the equipment, i.e., whether it was okay or needed additional work, parts, etc.

Data from the completed work card is fed back onto the master card for future use.

Obviously, provision has to be made in the scheduling system for delays in card processing caused by the need for repairs on equipment other than routine inspection, or for delays in making the inspection due to various reasons.



BEFORE YOU BUY, THINK:

Will your air-cooled condensers sound like thunder?

Not even from close up
if they're by Halstead & Mitchell

Fan noise, vibration and rattling have been engineered out of H&M air-cooled condensers. Deep pitch fans are run at slow speeds. Casings are rugged; won't loosen with use.

H&M condensers are completely dependable. The large coil and exclusive Turbu-Flo fins improve heat transfer by up to 15%. Fins are spaced widely to avoid clogging by dirt and other air-borne particles.

Winter operation is easy, too, with H&M's special modulating valve. Halstead & Mitchell air-cooled condensers are available in propeller fan or blower models. Multiple circuiting at no extra cost. Ask your local distributor for complete information, or write to Halstead & Mitchell, Bessemer Building, Pittsburgh 22, Pa.

H&M AIR-COOLED CONDENSER

HM Halstead & Mitchell

Water-Cooled Condensers · Cooling Towers · Air-Cooled Condensers · Finned Coil Products

Inside Dope

By GEORGE F. TAUBENECK

(Concluded from Page 1, Col. 1)

Freeze-dried tissue can be kept in refrigerated storage five years or longer. It is being shipped all over the world, presently, to 150 institutions where surgeons are cooperating with our Navy in a long-range research program.

In addition to skin, the Navy's refrigerated "spare parts" banks store muscle sheath, skull lining, corneas, bone, cartillage, and arteries.

All this "stuff" has been obtained from autopsies with consent of next of kin.

Bits of these refrigerated tissues have been grafted into and onto 3,000 patients already —with complete success.

Such life-saving service is free, but surgeons who borrow Navy tissue bank material cooperate by reporting fully on each case and the results.

Navy's freeze-dry process involves reducing the temperature of a human "part" slowly down to 105° below zero Fahrenheit.

Hot News on the Water Problem

A self-contained 4,000 gallons-per-day distilling unit, which uses sea water as raw stock, has been designed and constructed for the U. S. Navy by Badger Mfg. Co., Cambridge, Mass.

This electrically-powered device, first of its kind to be delivered to the U. S. Navy, combines low first cost, low operating and maintenance costs, and low unit cost for the fresh water produced.

Combination of compatible processes makes the assembly highly flexible.

Prototype unit, which now is being tested at the U. S. Navy Engineering & Experiment Station, Annapolis, Maryland, operates on a forced recirculation vapor compression process.

It is the forerunner of a process expected to deliver one million gallons of fresh water per day, powered either by electricity or steam.

Incidentally, the prototype unit has nozzled well in excess of its designed capacity of 167 gallons per hour of distilled water.

Essential components of the apparatus include a reboiler, flash tank which separates the water vapor from the residue, a vapor compressor, heat exchangers, vacuum pumps, and various motors and control devices.

All that machinery, along with pumps and controls, is mounted on a single skid.

Conversion of sea water to fresh water is tremendously important to the future of our industry—and to world progress, especially in the developing nations.

Aloha Oe to Charley Nolan

In Hawaii's refrigeration, air conditioning, and electrical business life, C. E. Nolan has been an outstanding personality for almost four decades.

As of January, 1960, he is retiring from his position as Vice President and Promotional Manager of the Hawaiian Electric Co.

"Dope" feels especially indebted to this grand fellow.

Away back in 1936, and again as recently as 1958, Charley Nolan took us by the hand in Honolulu, and introduced us to the best news sources and most interesting people in his Paradise of the Pacific.

Now that Hawaii has become our 50th State, perhaps Charley feels that he can retire gracefully.

Incidentally, Mr. Nolan's tall-and-personable redheaded son is manager of Honolulu's newest and best-run hotel, the Reef. Subscribers who expect to visit Honolulu please note.

Thoughts for the Week

Gratitude is the most exquisite form of courtesy. — JACQUES MARITAIN.

The way to a man's purse is through his hobby.

A London cockney, in the dark days of 1940, said with spirit, "Life ain't all that you want, but it is all that you can 'ave. So stick a geranium in your 'at, and be 'appy." Perhaps that is the kind of philosophy that would help us. It certainly sustained many Britishers in those difficult days. — DR. RALPH W. SOCKMAN.

Add Newspaper Boners

Egyptian belly dancers cover up that part of her which other is that Conrad Hilton has made all men who want to work at his new Nile Hilton hotel shave off their moustaches.—*Brownsville* (Texas) *Herald.*

Lasting peace can never come as long as almost 70% of the world's people are starving, ill-housed, or deceased. — *Lynn* (Mass.) *Telegram.*

The new queen was drowned by the 1958 queen.—*Worcester Daily Telegram.*

For this new venture Mike Wallace has assembled a staff of experienced reporters and a full-time crow to do film coverage.—*New York Herald Tribune.*

In trousers and pyjamas top he dashed for the bride. He was passing through the chart room when he felt the impact and braced himself against the wall.—*Quincy Patriot Ledger.*

The dead man in the boat was not injured.—*New York Daily Mirror.*

Three Senators Hit Ike on Arms.—*New York Mirror.*

Illegal Liquid Activities Net $90,880 for Police Department. *Oklahoma City Times.*

The calls started at noon Saturday night. — *Cape May Court House* (N. J.) *Gazette.*

Assistant State's Atty. Douglass B. Wright expressed concern that unless the murder starts next Tuesday, it may not be possible to conclude it before the end of the winter criminal term later this month.—*Hartford Courant.*

A three-year program to modernize City Hall officers will cost approximately 1.5 million.—*Los Angeles Times.*

The evening was spent by having a program. — *Clark County* (Ill.) *Democrat.*

INSIDE STORY

reveals why Penn water valves stay on the job longer!

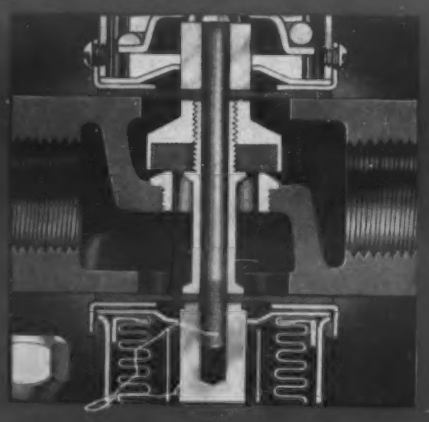
Look inside the Penn water valve shown below. See how the two diaphragms keep water away from the bellows, range spring and sliding parts. Water... with its rust, corrosion and sedimentation... never has a chance to attack these "working parts" and cause destruction. That's why the Penn Series 246 stays on the job much longer than ordinary valves!

This is one of the many reasons why more manufacturers and installers buy Penn than any other valve and why we say... the Series 246 is your best buy! Ask your wholesaler, he'll tell you...

Try Penn on your next job!

Wide range of sizes and capacities available. All-Range model, suitable for both R-12 and R-22, available in ⅜", ½" and ¾" sizes.

No rust, corrosion and sedimentation. Exclusive design keeps water away from bellows, range spring and sliding parts.



PENN CONTROLS, INC. Goshen, Indiana

EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N.Y.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

Clearwater Plans First All Air Conditioned School In Florida

CLEARWATER, Fla. — Following receipt of a letter from City Manager J. R. Stewart stating the city would cooperate in supplying natural gas at a special, all-year rate, the local school board voted to go ahead with plans to build an air conditioned junior school in the Clearwater area.

A board spokesman said the air conditioning in the new 16-classroom school will be powered by natural gas. The city has two rate schedules, and the school will fall under "Plan B" with an amendment to make it effective for 12 months of the year instead of from May to November.

Architect James Bruce strongly recommended the board to take positive action to insure construction of the new school, which he called "a precedent-setting building." He pointed out that "there are no all-air conditioned schools in the state at this time."

New Carrier Production Facilities Can Boost Output 50% above '59

SYRACUSE, N. Y.—Substantial increases in the sales of some of the major air conditioning products of Carrier Corp. were forecast by Russell Gray, vice president of the corporation and general manager of the firm's Unitary Equipment Div.

Gray told more than 400 distributor representatives at a national sales meeting here that the division he heads has completed production facilities capable of producing close to 50% more goods than during the record high sales year just ended.

The Unitary Equipment Div. makes room and central air conditioners for residences, air conditioning units for commercial and industrial application, and a broad range of components for air conditioning systems.

Gray said Carrier's preparedness to meet the increased volume which may occur during the next three years is due to capital investments during the recession years of 1957 and 1958.

He described the decade of the 1960's about to start as offering "really extraordinary growth opportunities" to air conditioning distributors and dealers prepared to take advantage of them.

The distributors were shown the results of Carrier's expansion and improvement program of the past four years which has added 5½ acres of unitary product manufacturing area, 7½ acres of centralized warehousing, an engineering laboratory for unitary equipment, and a complete research facility for advanced work.

All of the division's high volume production is now concentrated under one roof and integrated for an unbroken flow from raw material to finished product," Gray said.

Mathes Names Harold McDonald

FORT WORTH, Texas—Harold McDonald has been elected vice president in charge of manufacturing of The Mathes Co., it was announced by Benjamin Ebersman, president.

H. McDonald

McDonald will be in charge of all manufacturing of Mathes, which makes residential and commercial air conditioners and heat pumps. His new post was recently created as part of an overall corporate plan providing for future company growth.

McDonald joined Mathes in 1954 as tool and die shop foreman.

Dinner Meeting Launches Silver Shield Program In Mercer County, Pa.

SHARON, Pa.—After months of organizational and training effort, the Silver Shield Program was launched here.

Kick-off of the Mercer County Silver Shield Association was held at the Shenango Inn here. The dinner-meeting was attended by some 125 people.

Graduates of the Bureau's Silver Shield Training School were awarded certificates as part of the evening's program. Instructor for the 12-week training program, James W. Martin, made the presentation. Martin is a Pittsburgh dealer-contractor who traveled to Sharon weekly to teach the course, the first ever given in this area.

Beside key dealer-contractors, manufacturer representatives, and wholesalers concerned with fresh air heating and cooling systems, guests included Mercer County district attorney John Q. Stranahan.

Stranahan was the featured speaker of the night's events that included presentation of the official operating license by James M. Martin, managing director of the National Warm Air Heating & Air Conditioning Association, Silver Shield Program sponsor.

President of the Mercer County Silver Shield Association is Bernard Lawrence of Greenville. Other members of the new bureau are:

Archie R. Hoffman, J. C. Hoffman & Son, Sharon; Steve Worona, Sharon; Max E. Roth, Empire Heating Co., Farrell; William S. Chakan and Harlen G. Jackson, Valley Heating & Sheet Metal, Farrell; Anthony Napolitan, Tiny's Heating Service, Sharon.

Also, Martin Davis, Bud's Heating Service, Sharon; Anthony Rotell, Lewis Furnace Co., Sharon; Leo DeMay, DeMay Heating & Cooling Co., Masury, Ohio; Edward Zipay, Zipay Bros., Sharon; and Daniel F. Grimm, Waterbury Sales & Service, Sharon.

Besides the mayors of Sharon, Greenville, and Farrell, Pa., numerous bankers and home builders were in attendance.

William G. Kohl Dies

MILWAUKEE — William G. Kohl, 72, a heating contractor here for 26 years, died recently in Milwaukee County hospital. He founded Kohl Heating Co. in 1930, retiring in 1956.

every inch a VIKING!
At Viking, we realize that the production of highest-quality thin-wall copper tube depends as much on the skill and knowledge of the workers as much as it does upon machines. Accordingly, every man on the Viking production team has been carefully trained for his part in the job of producing thin-wall tube. He knows exactly what he is doing.
He is dedicated to the Viking proposition that nothing but the best will do — whether it is meeting a particular specification for tubing — or an emergency schedule for delivery.
Viking sales and engineering personnel are always ready to discuss with you any special copper tube requirements you may have. They know they can take your order, in complete confidence that all your specifications will be met — exactly. That's because everyone engaged in the manufacture of Viking copper tube adheres unswervingly to the idea: it *must* be every inch — a Viking!
VIKING
COPPER TUBE CO.
CLEVELAND 10, OHIO

Test Nitrogen Freezing Method To Keep Foods Frozen While In Transit

CHICAGO — Being tested by Libby, McNeill & Libby is a new nitrogen freezing method for keeping frozen foods frozen while in transit.

Known as "Liquefreeze," the substance is simply pumped into the tralier body. It penetrates food cartons and reportedly can bring temperatures down as low as -300° F.

The process was used by Libby recently in shipping strawberries, raspberries, and other items from California to Chicago by piggy-back, a combination of rail and truck. When the trailer was opened here after seven days in transit, the food was found to average -35° F., it was said.

The method is ready for commercial use, according to W. L. Morrison, who developed it. Patents are held by Liquefreeze Corp. of New York City, a subsidiary of Isbrandsten Co., Inc., owner and operator of American flag ships.

According to Libby officials, the new process is "unquestionably a matter of revolutionary importance in the food business." Tests have shown, they said, that product quality was not deteriorated by the low temperature but "probably improved."

Truck trailers now being used were especially fitted by the Haskelite Corp. Specialized insulation consists of foamed plastic sandwiched between ¾-in. plywood panels.

'Over-the-Road Delivery'

'Thermo-Sealed,' Refrigerated Containers Avoid Multiple Handling of Meat In Test

MINNEAPOLIS — Something new in over-the-road meat delivery was demonstrated at Southdale by Geo. A. Hormel & Co. of Austin, Minn. to more than 100 meat and grocery retailers.

The system brings meat directly from the packing house to the store in sealed, refrigerated containers, avoiding multiple handling before the products reach the consumer.

Hormel developed the "thermo-sealed" delivery servive in cooperation with Clark Equipment Co. and North American Car Corp. The service is being launched on a regular five-day a week schedule from Austin to the Twin Cities.

It eliminates the unloading of large highway trailers at the Twin Cities branch and reassembling and loading meat back into a number of small delivery trucks.

The perishables are sealed and maintained at a constant temperature until placed in the retailer's cooler, it was stated.

Twenty-three pieces of equipment are used in the new operation. Included are 12 aluminum reefer containers of 5-ton capacity, two 40-ft. flatbed trailers, Diesel tractors, mounted fork lifts, and smaller city delivery chassis.

Although the containers used by Hormel in the Austin-Twin Cities service are cooled by a combination of dry ice and circulating fans, North American Car points out that for use over great distances, the unit can be adapted to mechanical refrigeration without difficulty.

Bohn Aluminum Acquires Port Everglades Steel

DETROIT—S. D. Den Uyl, chairman, and Terry W. Kuhn, president, of Bohn Aluminum & Brass Corp., announced that Bohn has acquired inventories, machinery and equipment, and all rights to the going business of the Port Everglades Steel Corp. at Fort Lauderdale, Fla., an importer of steel products used in buildings and highways.

Transicold Plans Modern Office Near Los Angeles

LOS ANGELES—New modern plant and offices are being constructed for Transicold Corp. on a 3½-acre site at 1100 S. Taylor Ave. in Montebello near Los Angeles to replace the present location.

Transicold, which was incorporated in 1950, manufactures mobile refrigeration equipment for truck trailers and mobile air conditioning equipment for highly specialized uses. It plans to add an important new line of transit refrigeration.

Freightliner Corp. of Portland, Ore., recently purchased Transicold Corp. as a wholly-owned subsidiary. Freightliner is the truck manufacturing subsidiary of Consolidated Freightways, Inc., which has executive offices at Menlo Park, Calif.

The joint announcement of T. D. Taylor, president of Freightliner, and M. W. Brainard, president of Transicold, said Transicold will function as a virtually autonomous unit.

Transicold will continue under the leadership of Brainard, now chairman of the board, with direct charge of research and development; John Grim, now president; and "Cap" Winslow, sales manager.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

DON'T OMIT THE ESSENTIAL INGREDIENT IN SELLING

Most of your prospects need their cash reserves and usual lines of credit for current operation. Make it easier for them to sign on the dotted line by including financing arrangements. COMMERCIAL CREDIT's Refrigeration Plan has become an essential part of the proposals of leading commercial refrigeration suppliers. COMMERCIAL CREDIT's Refrigeration Plan is tested by time and experience in handling the financing for thousands of commercial installations. Let us show you how COMMERCIAL CREDIT's experience and know-how can save you time and money —help you close sales with less delay. Call the nearest office or write COMMERCIAL CREDIT CORPORATION, 300 St. Paul Place, Baltimore 2, Maryland.

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COMPLETE YOUR PROPOSAL WITH FINANCING ON THE

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Another service offered by affiliates of Commercial Credit Corporation

you can depend on TERMINAL SEALS by WATSCO

TO STOP TERMINAL LEAKS ON ALL SEALED UNITS, EASILY, QUICKLY, AND PROFITABLY

U.S. Pat. No. 2,451,701

T-100 T-200 T-300 T-400 T-500

Watsco hermetic TERMINAL SEALS screw right over the original terminal post sealing the leak instantly and permanently. Can be installed in just three minutes right on the job.

All WATSCO TERMINAL SEALS are designed to fit standard 10-32 terminal rods. If sizes other than these are required, please send specifications and we will make them for you at no additional charge.

a new addition to watsco's terminal seal family is the all new DERCO SEAL

Made of bakelite the derco seal is WATSCO'S newest contribution to the service industry. Installed in the same manner as WATSCO SEALS mentioned above, each DERCO SEAL has its own electrical connector. Overall height is short enough to allow terminal cover replacement. Cannot short out. High dielectric strength. Fits almost every make unit.

U.S. PAT. NO. 2,451,701 & ADD. PAT. PEND.

"ANNOUNCEMENT TO THE TRADE"
Please take notice that infringers of Patent No. 2,451,701, covering our terminal replacement for sealed refrigeration units, will be prosecuted to the fullest extent permitted by law. This announcement is addressed not only to manufacturers of infringing terminal replacements, but also to those who sell, distribute or use them. (Signed) WATSCO, INC.

T-300-B

Send for our free 1959 catalog for detailed information of TERMINAL SEALS and other WATSCO products. Write to Dept. N-211.

WATSCO INC.

1020 E. 15th STREET • HIALEAH, FLORIDA

Lau Installs 35,000 C.F.M. Code Tester To Secure More Complete Data on Blowers

DAYTON — Engineering test facilities at The Lau Blower Co. here have been greatly expanded with the completion of a huge new 35,000 c.f.m. code tester.

It's the largest of its type ever installed by the blower and fan manufacturing firm and represents a tremendous increase in capacity over existing test equipment, according to the announcement.

"With this new tunnel and its adjacent facilities, we will be able to supply more complete data on the performance of our blowers," says William H. Wentling, chief engineer. "This information will be made available to the manufacturers of heating and air conditioning equipment, as well as to other users of our type of blower equipment."

Wentling points out that rapid technical developments in the heating and air conditioning industry point to the need for more accurate and specific performance data than was previously required. The following is a list of presently available air volume and pressure testing equipment:

Tunnel No. I—1,000 to 35,000 c.f.m. at 0 to 6¾ in. static pressure.

Tunnel No. II—1,000 to 22,600 c.f.m. at 0 to 3¾ in. static pressure.

Tunnel No. III—100 to 4,300 c.f.m. at 0 to 3¾ in. static pressure.

Tunnel No. IV—10 to 400 c.f.m. at 0 to 3¾ in. static pressure.

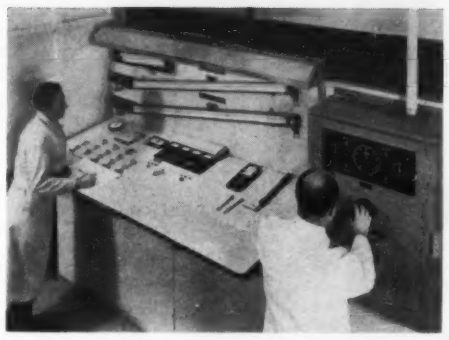
Flow Meter No. 1—21 to 210 c.f.m. at 0 to 20 in. static pressure.

Flow Meter No. 2—0 to 21 c.f.m. at 0 to 20 in. static pressure.

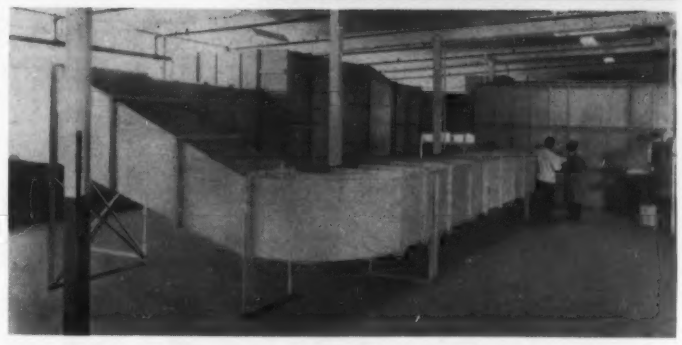
Under construction for more than a year, Tunnel No. 1, along with all other tunnels, is located in a building formerly used as a warehouse across the street from Lau main offices and production facilities in Dayton.

The area provides a reception room, lab supervisor's office, laboratory set-up and pre-test section, technician's office, instrument room, and main tunnel section.

The new tunnel is divided into five sections: Test chamber where the blower under test is positioned and powered by a 15-hp. dynamometer or other adequate power source; test blower discharge duct; approach chamber; nozzle chamber with nozzle manifold; supply blower chamber.



M. S. STEELEY, supervisor, Lau engineering laboratories, left, and Robert McGonigle, right, operate controls from central panel. All readings are made directly from this panel, minimizing additional calculations required for complete data.



NEW 34,000 c.f.m. code tester for blowers is now in operation at The Lau Blower Co. This test tunnel is believed to be the largest ever installed by a manufacturer solely for testing blowers. Control panel is located at extreme right. Behind this is large chamber where blower undergoing test is mounted. System can be run open or closed.

This latter section has a 36-in., backward inclined, double inlet blower with controllable inlet vanes, plus two outlets and three dampers in the supply blower exhaust duct.

With this arrangement, the system can be run open or closed. Both Class I and Class II blowers will be tested.

All readings are made on a central control panel. This panel holds controls and instruments for the dynamometer, test blower, supply blower, and variable suction inlets. "This arrangement provides more direct readings with less calculations to be handled by the personnel," says Wentling.

"More accurate information is secured in this manner. This information will be translated into tabular facts as well as the essential blower performance cures."

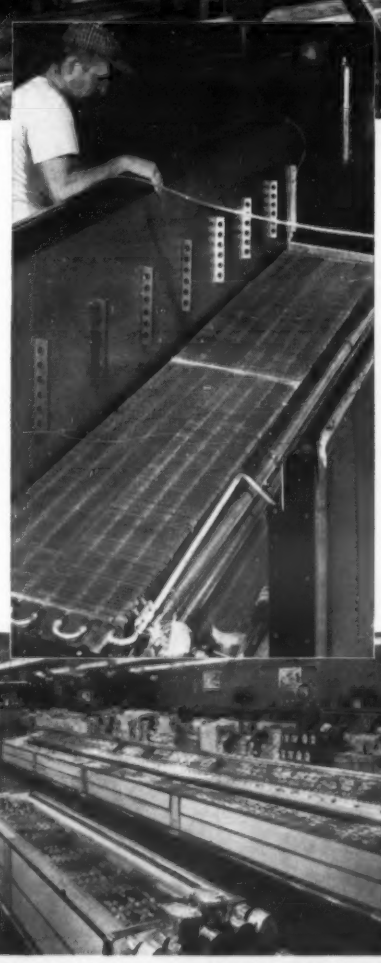
LOOKING?
FOR REFRIGERANT HANDLING & MEASURING EQUIPMENT...

• Charging Stations • Charging Boards • Portable Refrigerant Measuring Tubes • Charging Hoses and Valves • Oil and Methanol Measuring Tubes • Quick Couplers • Tank Stands • High Vacuum Pumps • Manometers • Vacuum Gauges

SEE YOUR WHOLESALER OR WRITE US.

AIRSERCO MFG. COMPANY
435 Melwood Ave. • Pgh. 13, Pa.

PHOTO ABOVE shows one of the Tyler cooling units, made of Revere Copper Tubing and fins of Revere Aluminum, in the final stages of assembly.



MIDDLE PHOTO shows completed condensing unit in place in one of the Tyler Refrigerated Sales Cases. Revere also supplies aluminum sheet in plain and embossed finish for miscellaneous cabinet trim and structures.

BOTTOM PHOTO SHOWS one of the newest Tyler Sales Cases installed in a modern super-market. Tyler, a pioneer of important improvements in this type of equipment, makes units for every type of perishable food and for every store need.

A combination that produces superior commercial refrigerators for TYLER customers –

fresher, more palatable foods for your table

Because of its distinct, money-saving advantages the combining of aluminum fins with copper tubing has been rapidly growing. But this very combination also calls for care in assembly as well as care in the manufacture of the aluminum sheet and copper tube.

That's why Tyler Refrigeration Corporation, Niles, Michigan, tells us they use Revere Aluminum Sheet and Revere Copper Tubing in fabricating coils for their Commercial Refrigerated Sales Cases.

For, in addition to the uniform wall thickness and close, even grain structure which permits bending without distortion, Revere Copper Tubing is readily brazed or soldered, thus making it easy to put on return bends. And, since copper expands so readily it assures a tight fit with the aluminum fins.

Add to this, the accuracy of gauge of the Revere Aluminum Sheet and its lightness, plus the conductivity properties, the non-rusting qualities and ease of fabrication of both copper and aluminum and you have an efficient, economically operating cooling unit.

In on the ground floor, Revere, because of its many years of intimate knowledge of both copper and aluminum is qualified to assist manufacturers of refrigeration, air conditioning and heating equipment in their development, with gratifying results.

Why don't you take advantage of this accumulated knowledge and consult with Revere's Technical Advisory Service on *your* problems?

REVERE COPPER AND BRASS INCORPORATED
Founded by Paul Revere in 1801
230 Park Avenue
New York 17, N. Y.

Mills: Rome, N. Y.; Baltimore, Md.; Chicago, Clinton and Joliet, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Brooklyn, N. Y.; Newport, Ark.; Ft. Calhoun, Neb. Sales Offices in Principal Cities, Distributors Everywhere.

They'll Do It Every Time

by

Jimmy Hatlo

TELL KLEBO ANY JOKE, AND HE GIVES YOU THE SAME SOUR-PUSS REACTION EVERY TIME····
—GUY SOLD HIS HOUSE FOR $50,000— THE TERMITES CHIPPED IN A BUCK APIECE···
WHAT'S SO FUNNY ABOUT THAT? YOU AND YOUR CORN! GET SOMETHING NEW FOR A CHANGE!!
BUT LET BULLDOZE, THE FOREMAN, SASHAY IN AND TELL THE SAME WHEEZE··· LISTEN TO KLEBO NOW····
SO THE FELLA SEZ, "YUP··· GOT $50,000 FOR THE OL' DUMP··· THE TERMITES CHIPPED IN A DOLLAR EACH!"
HA-HA-HA-HO-HO!! YOU KILL ME, CHIEF! THAT'S A WOW!! I GOTTA REMEMBER THAT ONE! YOU SURE CAN TELL 'EM! HA-HA··
THANK AND TODAY OUR HAT IS OFF TO ANTHONY RUSSO, 74 DEAN ST., STAMFORD, CONN.
9-8
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Air Conditioning Goes Far Beyond Comfort— It Delivers Good Health!

(Concluded from page 1)

general public, is *clinical proof* of these health benefits.

Such proofs are difficult to obtain (and that's one prime reason why *ACH&RN's* sister publication, AIR ENGINEERING, was launched). That worthy magazine is developing and producing such information regularly.

In the meantime:

Searching for some way to justify the expense of air conditioning, our industry has tried to find proof that it increases both work production and accuracy, and that there is less absenteeism in an air conditioned building.

If such proof could be established, it would be possible to calculate the benefits of air conditioning in terms of dollars and cents, and to determine over what period of time an industrial air conditioning system would pay for itself through savings in employe costs.

Well, such proof has been established. A U.S.A. Government agency, the Public Buildings Service of the General Services Administration, recently published an enormously important report entitled:

"Influence of Air Conditioning on Work Production."

Said G.S.A. study probably is the most useful air conditioning sales promotion piece ever produced.

During five summer months in 1957 our U.S.A.-G.S.A. government agency compared identical clerical work performed in two wings of a Washington building (only one of which was air conditioned) under quite closely controlled comparison research conditions.

That research uncovered crystalline gems of good news for air conditioning salesmen. Despite its sober and cautious bureaucratic language, the G.S.A. report came up with quite exciting and unequivocal testimony and testimonials.

On the basis of government-supervised impartial evidence, it would seem fair to conclude that air conditioning resulted in:

1. A substantial average INCREASE IN WORK PRODUCTION (9.5%).

2. A modest DECREASE IN ERRORS (0.9%).

3. A profitable DECREASE IN ABSENTEEISM (2.5%).

4. A helpful DECREASE IN EMPLOYE'S LIVING EXPENSES (savings on cleaning bills, hairdos, make-up, clothing, etc.).

5. An important CONTRIBUTION TO EMPLOYE COMFORT AND MORALE.

Therefore, we can assume that in any other type of office work (where the rate of production is not standardized, or where no minimum requirement is met consistently) a projected increase in productivity through air conditioning will be more than enough to *pay for* the installation—*via* savings in wages, better work-norm rates, and employe morale.

(For the full text of the G.S.A. Report, please re-read full story in AIR CONDITIONING, HEATING & REFRIGERATION NEWS, May 4, 1959.)

NOW the Air Conditioning Industry has that Proof it has been looking for so hopefully. And it should lose no time in letting every prospect everywhere in the world know that air conditioning does pay—that it makes money in addition to saving money.

Months and months after this extraordinary G.S.A. Official Report on the health-and-productivity effects of air conditioning was issued, nothing much has happened, commercially speaking.

Our business enterprises have failed to capitalize upon it sufficiently.

Moreover, industry interest in this True Dimension of Air Conditioning (Health and Productivity) seems to be lacking—at least in emphasis.

No time for using it, apparently. What price is the other fellow quoting? Undercut him, dammit!

Is air conditioning a business, or is it a silly game of give-away checkers which nobody wins?

Let's sell Better Health and Productivity, rather than Price.

AN INTERNATIONAL INSTITUTION • SUBSCRIBERS ALL OVER THE WORLD

Trade Mark reg. U.S. Pat. Office; Est. 1928

AIR CONDITIONING HEATING & REFRIGERATION NEWS

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F. M. COCKRELL, *Founder*

'The Conscience of the Industry'

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ARTICLE ON PUERTO RICO INTERESTS READERS

850 Bryant Ave.
Bronx, N. Y.

Editor:

For the first time I got a real thrill out of the NEWS. Your article on Puerto Rico really is worth something.

I have been working on plans to go to P. R., and through your NEWS I got a start and, I hope, a good lead.

A. FELICION

* * *

E. Leon & Co., Inc.
Santurce, Puerto Rico

Editor:

In the first place, I want to congratulate you and the NEWS for the wonderful articles about Puerto Rico that were printed on your issues dated September 28th, and very specially for the ones on the issue of October 12th.

Will you please be so kind as to send us six copies of the issue of October the 12th, immediately by air mail?

We thank you in advance and trust to hear from you in the very near future. Meanwhile we remain

HONORATO BALZAC, Mgr.,
Fedders Department

INSIDE DOPE READER LOCATES FOOTBALL TEAMS

Joseph Simons Co.
Hartford, Conn.

Editor:

We know—You're just trying to find out if we read "Inside Dope." Well we do.

In the East—American International College is in Springfield, Mass.

And Quonset Point NAS (Naval Air Station) is in Rhode Island.

It's a great column you've got. Keep it up.

JOE SIMONS

Handy Way to Subscribe

To See the Industry In Action EVERY WEEK

Keep up-to-date on what's going on in your industry. You'll see action weekly in AIR CONDITIONING, HEATING & REFRIGERATION NEWS. Covers latest news and gives you top how-to-do-it reports on residential, commercial, and industrial air conditioning, heating, and refrigeration for contractors, dealers, consulting engineers, distributors, servicemen, and manufacturers. Read the industry's only newspaper every week—you'll profit by it—only $6.00 per year, 52 issues (U.S. and Canada). Foreign: $10 per year.

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450 W. Fort St., Detroit 26, Mich. 11-16-59

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OHI Convention To Run Concurrently

National Oil Heat & Air Conditioning Exposition More Than Half Sold Out

NEW YORK CITY—Reporting at a recent meeting of the board of directors of the Oil Heat Institute of America, R. S. Doherty, vice president, A. W. Cash Valve Mfg. Co., stated that exhibition space for the 23rd National Oil Heat & Air Conditioning Exposition was more than half sold out.

Doherty is chairman of the exposition, which will be held in the New York City Coliseum, April 4-7, 1960.

The sales reports to date were well in excess of sales for any similar period for previous shows and all space is expected to be spoken for well in advance of the exposition dates, it was stated.

Firms interested in available space should contact the OHI at 500 Fifth Ave., New York City 36.

Special Air, Train Tours Arranged

Later, it was announced that Everett Elliott, president, C. L. Elliott Co., Danvers, Mass., has been appointed chairman for the 38th annual OHI convention. The convention runs concurrently with the exposition.

According to Elliott, more than 15 special air and train tours to New York City for the convention and show are being arranged by the OHI. These tours will be sold as a "package" which will include the train or plane fare, hotel, and the convention registration fee entitling registrant to all events connected with the show and convention.

OHI To Step Up Public Relations

A decision was made at the board meeting to step up by 50% the activities of the OHI in the field of promotion and public relations.

It is anticipated that, in addition to wider and more expanded activities, field trips by OHI public relations representatives will be instituted to assist local OHI chapters, to "dig out" news value material from various localities and call on oil heating manufacturers and accessory firms.

The Education Committee of the OHI reported at the meeting that a new film strip on instrument testing has now been completed and copies are available. The film was prepared and produced by the Bacharach Industrial Instrument Co.

The OHI's Education Committee pointed to the need for a film strip which would show a step-by-step procedure which could be employed in combustion testing an oil burner. The committee urged the production of such a film strip.

The practice of listing heating oil dealers together in the "yellow pages" of the telephone directory is finding much favor in a number of cities, according to the OHI. At the board meeting, an exhibit was presented showing examples of how this practice was carried on in different localities.

Where there is joint listing, an attention-getting OHI Seal is prominently displayed. This seal usually appears in group cooperative advertising, particularly in areas where the "yellow pages" listings are in effect, all of which tends to bolster the public reputation of OHI dealer members, it was pointed out.

The "Treasury of Advertising" of the OHI—oil heat promotion pieces offered by the OHI to dealer members at nominal cost—is proving one of the most popular and effective projects ever undertaken by the organization's Distribution Div.

It was reported at the board meeting that sales for this fiscal year are expected to double those of the preceding fiscal year.

Thus far this year total sales of individual pieces have exceeded 6 million and will undoubtedly top 11 million for the year as compared with 6,125,000 for all of last year. This means more pieces of OHI literature distributed than there are oil burners in the entire U. S.

30 Carloads of Supermarket Sacks Produced

At the same meeting, Charles H. Burkhardt, national secretary of the OHI's Distribution Div., announced that the special supermarket sack promotion of the OHI has resulted in the production to date of 30 carloads of supermarket sacks with oil heat messages printed thereon and that 8 million such pieces with oil heat messages have now been distributed throughout the Eastern part of the U. S.

Favorable action on a number of applications for membership in two divisions of the Oil Heat Institute was taken at the meeting.

Take Action on New Members

The OHI's fast-growing Distribution Div. reported favorably on the application for membership made by the Better Home Heat Council of Florida, and four companies were made associate members of the division, Gallup - Silkworth Co., Ottawa Oil Co., Munising Coal Co., and Montgomery Air Conditioning Co.

Two new firms were elected to membership in the Manufacturer Div. They are American Tube Products Co., West Warwick, R. I., and the Appliance Control Div. of General Electric Co., Morrison, Ill.

The board of directors elected the following as members of the Commercial - Industrial Associates Unit, recently established by the Commercial-Industrial Section of the Manufacturer Div.:

Milton Way, Ray Oil Burner Sales, Long Island City, N. Y., chairman; Frank A. Sinning, Allied Oil Co., Cleveland; H. A. Conway, Christenson-Conway-Higgins, Inc., Kansas City, Mo.; Robert M. Benigson, Combustion Equipment Associates, Inc., New York City; Joseph M. Day, Joseph M. Day Co., Saginaw, Mich.; P. R. Deane, P. R. Deane Co., Geneseo, Ill.; Frank F. Wymbs, Jr., Hev-E-Oil Burner Distributors, Bronx, N. Y.; Harold Groble, S. T. Johnson Burner Service, Inc., Chicago; Stewart S. Pirie, S. S. Pirie Co., Detroit; Ira W. Van Vliet, Supreme Fuel Co., Orange, N. J.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

THIS UNIT PRODUCES...
• EXTRA YEAR 'ROUND PROFITS
• CUSTOMER SATISFACTION
• POSITIVE HUMIDIFICATION YOU CAN SEE . . . FEEL . . . AND DEMONSTRATE
WALTON'S PATENTED CENTRIFUGAL ATOMIZER

HERE'S WHAT'S SPECIAL ABOUT Walton HUMIDIFIERS . . .

WALTON'S METHOD

Unlike unprofitable, toy-like "evaporators" and "vaporizers," Walton humidifiers are scientifically-engineered, precision-assembled units designed for positive, truly effective humidification. Employing the patented "centrifugal atomizer," Walton humidifiers produce great quantities of visible vapor without problems of clogging jets, limed evaporator plates or smelly wet packs. They are easy to demonstrate, dependable to operate and will always gain complete customer satisfaction.

WALTON'S QUALITY

Walton humidifiers reflect the result of twenty-five years of pioneering and research in the field of humidification. Walton's sole product and interest is humidification, and the Walton name is your assurance of quality and performance. Constructed solely of non-corrosive metals, the units also offer electronic balancing of the single moving part for trouble-free, whisper-silent operation.

A SINGLE SOURCE FOR EVERY HUMIDIFICATION NEED . . .

RESIDENTIAL MODELS . . . FOR HOT AIR OR WET HEAT SYSTEMS

INDUSTRIAL MODELS . . . FOR SPACE OR DUCT TYPE INSTALLATIONS

Selected and publicized as the humidifier to be used in House Beautiful's 1960 PACE SETTER HOUSE

SOLD THROUGH THESE FULL LINE DISTRIBUTORS

Air Conditioning Distributors, De Witt, New York
Air Therm Supply Co., Cleveland, Ohio
American Supply Co., Inc., New Haven, Conn.
Associated Mechanical Services, St. Paul, Minn.
George L. Johnston Co., Detroit, Mich.
Charles D. Jones Co., Kansas City, Mo.
Mechanical Supply Co., St. Louis, Mo.
Standard Air and Lite Corp., Pittsburgh, Penna.
Wilson Supply Co., Washington, D. C.
York-Wagner Distributors, Inc., Milwaukee, Wisconsin
G. W. Berkheimer Co., Inc. Gary, South Bend and Indianapolis, Ind.
. . . and others

WRITE, WIRE, PHONE FOR FULL INFORMATION

Walton LABORATORIES, INC.
IRVINGTON 11, N.J.
(PHONE: ESsex 4-9600)
CHICAGO OFFICE:
548 W. Washington Blvd.
(PHONE: FRanklin 2-2298)

Please send full information on your complete line.

NAME_____

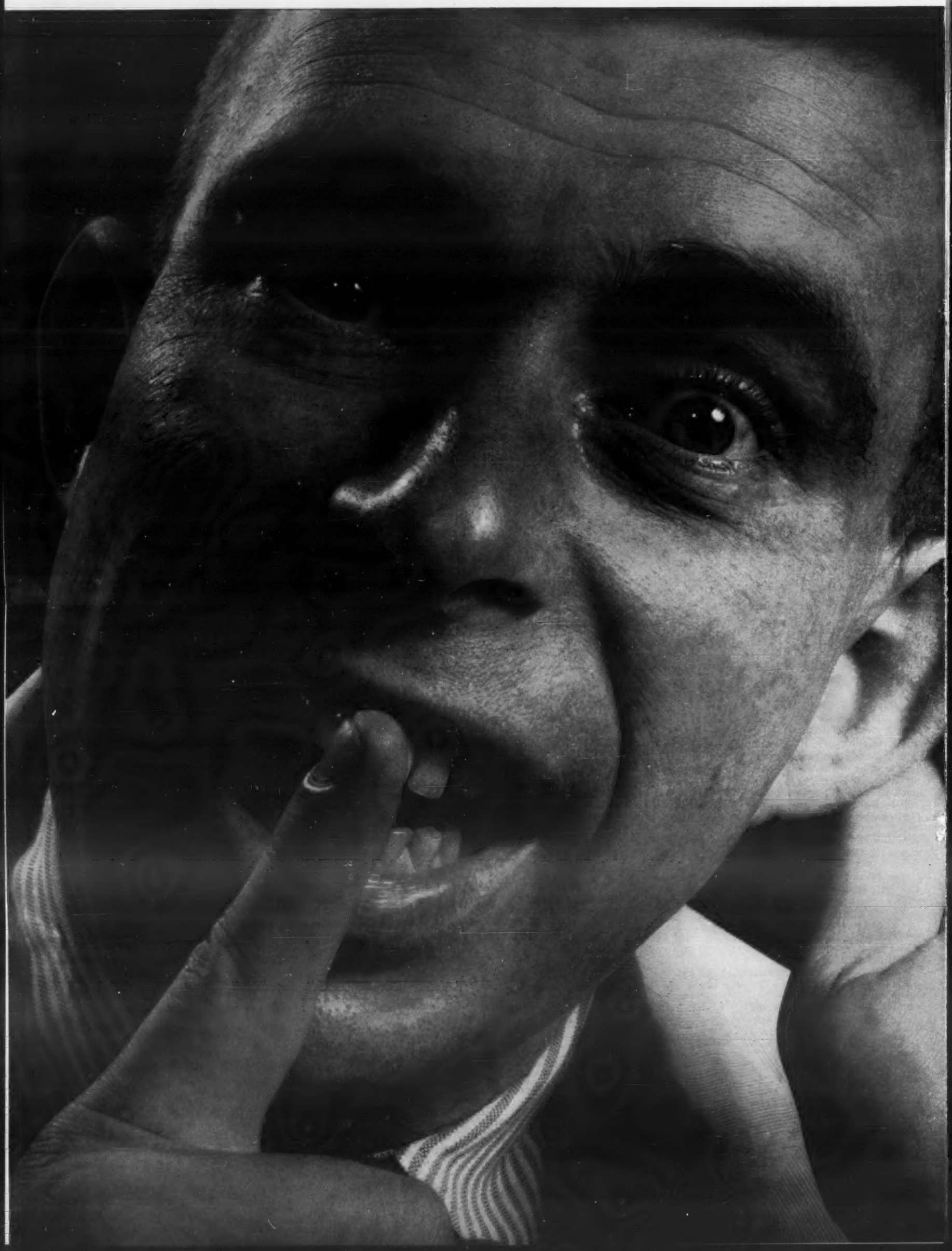
POSITION_____

COMPANY_____

ADDRESS_____

CITY_____ STATE_____

ahrn



Shhhhhhhh!

You'll have to be quiet to hear the new WESTINGHOUSE AIR-LINE MOTOR!

You can hear a pin drop alongside a new, extra-quiet-running Westinghouse Air-Line motor. This new 48-frame shaded-pole or permanent split capacitor motor is the quietest and most failproof motor you've ever used.

So very quiet because a Westinghouse design exclusive, a cushion of oil between nylon washers, *never gives sound a chance.*

So failproof because Westinghouse has eliminated the major source of air conditioner failures by welding and wrapping all electrical connections with multiple windings of insulating tape.

So moisture resistant because Westinghouse builds the entire motor for moisture resistance—with Mylar* insulation, a corrosion-resistant shaft, and double-dipped motor windings.

So much shorter—the shortest motor ever—with perfectly flat end-bells and recessed bolts.

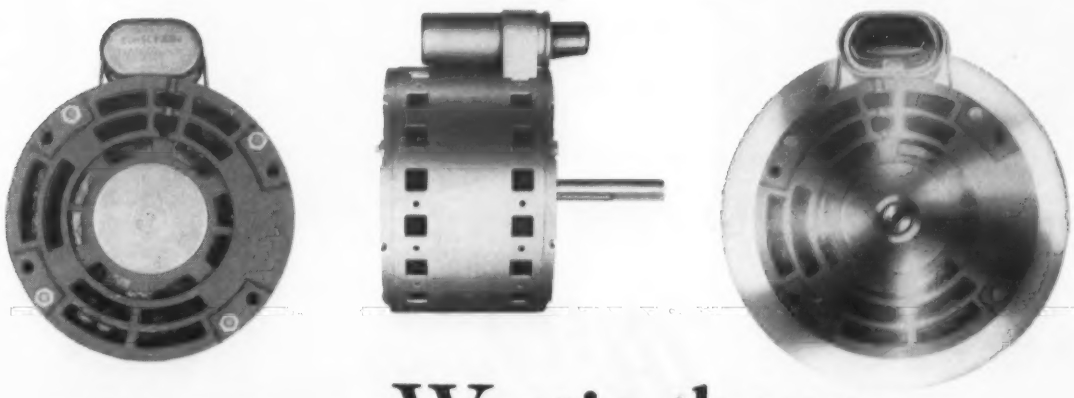
No oiling for five years or more with Permawick lubricating system.

With plug-in terminals or leads depending on your requirements.

Plus dozens of other features that your local Westinghouse sales representative will be proud to show you. Ask him for a demonstration today. Or write to: Westinghouse Electric Corporation, Mr. C. B. Jakes, Industrial Motor Department, Lima, Ohio.

*DuPont registered trade-mark

J-03054-A



YOU CAN BE SURE...IF IT'S **Westinghouse**

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Constant Changes In Weapons Technology Pose Problems For SAC Air Conditioning Engineers In Anticipating Load

By C. Dale Mericle

OMAHA, Neb.—Military planners may argue about the relative merits of guided missiles and airplanes in the future, but today the United States is banking on manned aircraft in the Strategic Air Command to prevent another world war or to retaliate swiftly in the event of attack.

Air conditioning is vital to SAC's operations, but to design systems that won't be obsolete or at least inadequate the day they're completed is a difficult if not impossible task.

This is no reflection on either military strategists or air conditioning engineers. Rather, it is an inevitable result of rapidly changing technology and the obviously necessary philosophy that peace-time defenses must incorporate the latest developments. Design of weapons systems and ground supports can hardly be "frozen" at this stage.

Experiences in providing air conditioning for SAC headquarters at Offutt Air Force Base near Omaha may or may not be typical of the problems faced by industry and military engineers, but they do offer some illustration of what can happen to the proverbial "best-laid" plans.

Just as the U.S. is depending primarily on SAC for initial defense efforts, so does SAC depend on its "control center" at headquarters here for direction of its operations, which include not only manned bombers but missiles as well.

MOST dramatic and likewise more important section of the command post 45 ft. underground at headquarters of Strategic Air Command is this operations control room where data about enemy and U.S. deployment is plotted on huge maps in view of commanding officers and staff in two-level "press box" at extreme left. Lights and television equipment create heavy sensible load.

Description of Control Center Helps Understand Air Conditioning Problems

A detailed description of the control center is essential for more complete understanding of the air conditioning problems.

The control center is in a three-story administration building and has a three-floor command post extending 45 ft. below ground level. The post gives Gen. Thomas S. Power, SAC commander - in - chief, complete control of SAC's global operations and the ability to order his strike force of bombers and missiles into action within seconds.

Facilities in the underground command post include a communications center, a global weather center, connections to a world-wide communications system, and a special long distance telephone system connecting the center to each SAC base in the world.

In the event of attack, the command post would automatically be sealed off and would become self-sustaining. It has its own air conditioning system, an independent water supply, an emergency electric power system, complete communications systems for teletype and voice transmission, and a 30-day supply of emergency rations.

Control Room Is Most Impressive Facility

Most impressive facility in the underground command post is the control room, which is 140 ft. long, 39 ft. wide, and 21 ft. high. Lining one wall the length of the room are giant panels, each 8 ft. wide and 20 ft. high, mounted on trolley rails for ease in handling.

These panels reflect all information needed to direct the global force in peace or war: world maps 16 ft. across, weather maps, charts showing deployment of the force, operational status of aircraft and missiles, current training exercises, etc.

SAC's emergency war plan, constantly changed as new information becomes known, is maintained on panels generally covered by drapes at one end of the room. The moment war starts, the drapes will be pulled and the panels rolled into position to make the command post ready for action.

Near the control room are two other large rooms. One of these is the Intelligence Air Room where posted on large maps is intelligence information needed to keep the emergency war plan up to date. In event of war this room would chart a running account of SAC and enemy operations.

Another room houses Operations Plans. Here are written the orders that would direct attacks against enemy targets.

Both of these rooms use the same trolley rails to carry the huge map panels.

Opposite the wall of panels in the main control room is a double-decked row of glassed-in rooms resembling the press box at a football stadium. Upper level has desks and working space for the general and his

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MAXIMUM security prevails at SAC headquarters where armed Air Police guard concrete corridor leading to underground command post, which would be sealed off immediately in event of war.

CHIEF source of air conditioning for SAC's administration building and underground command post are two 1,050-ton Worthington centrifugals driven by steam turbines. Another 600 tons of equipment is located in command post for emergency stand-by operation.

SPACE is at a premium in SAC underground command post. A current headache is how to install additional stand-by cooling equipment in this below-ground machine room to handle load of new electronic equipment scheduled for control center maps.

PROBABLY the most famous such instrument in the world, this "red telephone" in the "press box" of SAC's underground command post can alert all SAC bases in the world within 30 seconds in the event of an alert or attack. Alternate communications systems, however, can do just about as well should the red phone system be knocked out.

IF red light on this console in SAC control center comes on, it means nuclear radiation is in the headquarters area. Automatically air supplied to the underground command post is then by-passed through special filters.

By simply picking up the red telephone, the senior controller is in immediate contact with each of the command's numbered air forces and air division headquarters and the subordinate command post at each SAC base in the world. The controller then can order the execution of the emergency war plan. Time required to alert the force is said to be less than 30 seconds.

Backing up the primary alerting system is a secondary hookup. This enables the controller to gain contact with every SAC command post in the U.S. merely by pressing a button, as on the primary system. The alternate system permits the controller to contact the SAC bases by alternate routings if the numbered Air Force headquar-

(Concluded on next page)

staff during an emergency or war situation.

Liaison officers and other staff and command post personnel use the lower level. Entire length of the 140-ft. rear wall and the information on the panels lining it can be seen easily from any section of the "press box."

Behind the glassed-in area are three rooms occupied by the combat controllers. They pass orders to SAC commanders and combat units, to individual aircraft, and to isolated missile sites. Available to the controllers is a special operational telephone system providing almost instantaneous voice contact with any SAC commander in the field or with any SAC command post.

What has been called the most important telephone in the U.S. is a part of this long distance hook-up. Painted a bright red and nicknamed "Hot Line," it can be used to alert SAC's entire combat force.

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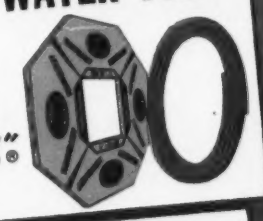

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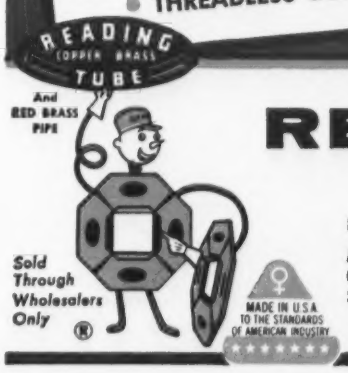

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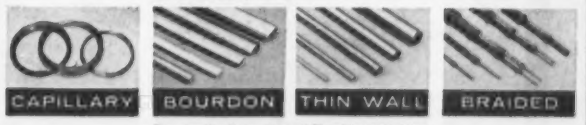

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SAC Command Post Air Conditioning--

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ters are destroyed by a quick, surprise attack.

Opening off one end of the main control room is the computer room housing an IBM 704 computer, which electronically stores all information pertaining to the SAC force, such as the status of aircraft and missiles, crews, bases, war plans, and supplies.

If U.S. goes to war, the computer records progress of the strike force by means of punched cards. New information is processed automatically in minimum time, giving SAC immediate and constant knowledge of the strike force status.

Already under development are computer systems that will be installed at each of SAC's numbered air force headquarters and the machines interconnected with SAC headquarters so that information in any one machine will be automatically recorded in all machines.

Installation of other information collecting systems is also in process.

Closed circuit television, including color units, is another feature of the command post, cameras being provided in the main control room, intelligence air room, and the global weather center. Receivers are located in the offices of General Power and key staff members. This system is used to brief staff officers, eliminating the need to go to several display rooms to collect information required for an immediate decision.

There is also a closed circuit television system connecting the SAC command post and the North American Defense Command combat operations center at Colorado Springs, Colo., and the SAC color television circuit can be hooked up with Air Force headquarters in Washington, D. C.

Under construction and scheduled to be completed soon is a three-story and basement addition to SAC's control center. Called the Target Trajectory Center, it will house intelligence specialists and equipment for plotting space trajectories for intercontinental missiles.

Two 1,050-Ton Machines Primary Cooling Source

Primary sources of air conditioning for both the administration building and the below-ground command post are two 1,050-ton Worthington centrifugal machines supplying chilled water. Both are driven by steam turbines.

Presently being installed for the missile trajectory center addition is a 500-ton American-Standard electrically driven centrifugal. This will be cross-connected with the existing equipment.

CONSTANTLY changing requirements of defense often mean an air conditioning system is obsolete or inadequate even before installation is completed. Round ceiling outlet here was part of system designed to handle large lithographic printing plant. When space was converted to electronic data processing, additional cooling capacity was required, which accounts for the additional ductwork and rectangular outlets.

In normal operation the two big Worthington machines provide chilled water for air conditioning both the administration building and the command post.

For emergency operation, however, the underground command post has nearly 600 tons capacity in stand-by air conditioning equipment that can operate independently of the main system although they are tied in together.

Problems, Solutions Vary from Those In Civilian Life

Air conditioning problems that confront civilian engineers at SAC headquarters like Russell Upham and Jack Taylor are numerous and often somewhat different than those encountered in civilian life. The solutions, too, are often somewhat different.

Using a psychrometric chart and slide rule to calculate loads is commonplace, of course, but there have been occasions at SAC when the design "yardstick" has been a yardstick, literally.

A case in point results from the change programmed for the control center map room. Instead of using airmen to plot data on the huge war maps, a new system to be installed will do this electronically.

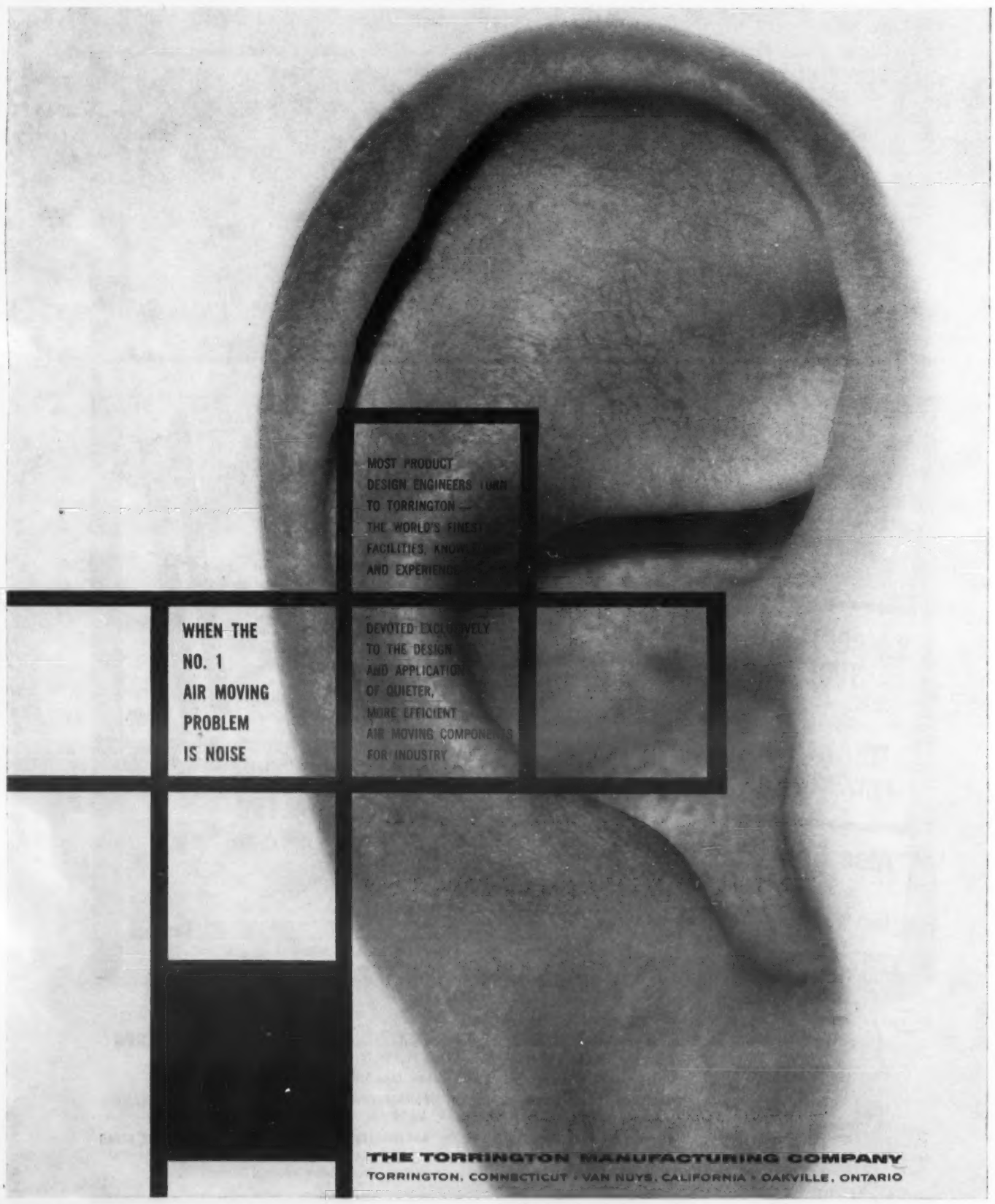
How much additional load this electronic equipment will impose on the air conditioning system isn't really known, but it very probably can be handled by the main central system. More stand-by equipment will be needed in the command post, however, and a 75-ton unit has been ordered.

Why a 75-ton unit? This is the largest unit in terms of capacity that will fit into the space available!

It is already anticipated, however, that the 75-ton machine will not be adequate, and so consideration is being given towards substituting centrifugal type equipment for increased capacity.

Storage Area Converted To Office Space

Another problem in calculating air conditioning requirements for space in the underground command post resulted



when a large area originally planned for storage of rations was converted to offices for personnel.

More air was required for ventilation as a result, but the over-all ventilation system did not have any excess capacity that could be tapped for this purpose. So, an electrostatic air cleaner and a bank of activated carbon filters were installed to revitalize recirculated air for this section.

Engineering? Perhaps rather, as expressed by Brig. Gen. J. B. Knapp, director of installations for SAC, "air conditioning is an art."

Still another case in point at SAC headquarters (and these problems are sometimes even more compliated at SAC bases throughout the world) involves an electronic data processing room. This is located in the administration building and is used for general statistical matters such as payrolls, etc.

Originally this area, which measures approximately 20 by 200 ft., was scheduled to house a lithographic printing plant.

"From what we were first told," recounts Jack Taylor, "we figured on a load of 1 ton per 200 sq. ft. Then we were asked to make provision for adding 50% more capacity within a year and to include control of humidity in the 40 to 60% range."

The comparatively close humidity control would be necessary, Taylor learned, because electronic computers to be installed would employ acetate magnetic tape, the tape, of course, providing the "memory" for such electronic "brains." Acetate tape is quite sensitive to humidity changes.

On the basis of this information, the system designed, ordered, and installed provided a sprayed coil for control of latent heat and a dry coil to handle the sensible machine load.

Preliminary studies and tests indicated this approach would give satisfactory results, but even before the system was completely installed, someone changed the signals!

Instead of using acetate tape in the computers, it was decided to standardize on mylar tape, which is virtually unaffected by humidity. So maintenance of such close humidity control turned out to be unnecessary, although some control is essential because of possible harm to the electronic equipment if humidity gets above 60%.

Obvious results of having to provide for changing requirements in air conditioning can be seen in this data processing room. In addition to flush-type ceiling outlets for air conditioning, there's a large, exposed duct below the ceiling supplying the additional capacity required for the electronic equipment.

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WASHINGTON, D. C.—When completed in 1961, the Central Intelligence Agency's multi-million-dollar, eight-story headquarters building near here will provide over a million square feet of air conditioned office space for all agency activities.

Facilities will also include a cafeteria seating 1,400 and an auditorium accommodating 500.

Since World War II, the CIA has been coordinating and interpreting data essential to the national security from scattered temporary locations throughout the District of Columbia.

Baltimore contractor Lloyd E. Mitchell was awarded the mechanical contract for the building in Langley, Va. He in turn awarded a contract to Worthington Corp., which is supplying most major mechanical equipment, including diesel generator sets, refrigeration compressors, steam turbines, induction units, and associated pumping equipment.

The Worthington contract includes four 1,500-hp. centrifugal refrigeration water chilling machines and almost 5,000 induction units. Four water chillers and self-contained units are also included to handle special cooling problems.

Two 2,000 kw. diesel engine generator stand-by units will be installed in case anything should happen to the central power station.

The building will have close to 100 Worthington centrifugal and vertical turbine type pumps, ranging in size from the fractional horsepower monobloc centrifugals to 20-in. vertical turbines with 250-hp. motors.

In order to lift large volumes of water from the central cooling plant to the top of the structure, some of the cooling water pumps had to be designed for unusually high discharge pressures, according to Worthington.

For stand-by reasons, some of the pumps are driven by steam turbines also manufactured by Worthington. To pre-heat water before it goes into the boiler, a Worthington 150,000 lbs./hr. deaerating feed water heater is being supplied.

General contractor for the building is Charles H. Tompkins Co. of Washington; architect is Harrison & Abramovitz, New York City; and consulting mechanical engineer is Syska & Hennessey, New York City.

The building is being designed and constructed under the supervision of the General Service Div., Public Buildings Service.

To Cool County Courthouse

CARTHAGE, N. C.—Attaches of the Moore County Courthouse here were jubilant when announcement was made recently that the county commissioners have let the final contract on air conditioning the huge stone structure which was built back in 1922.

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TECH CENTER

by Frank J. Versagi, Technical Editor

Applied Electrical Theory (Part 3)

Series Circuits

When more than one resistance device is placed in a circuit, it becomes possible to make the current flow through more than one type of path on its way from and to the emf source. Depending on how the path is designed, the circuit will fall into one of three categories: 1) series, 2) parallel, 3) series-parallel.

Simplest to understand is the series circuit—familiar to most through the older type of Christmas tree lights, the lamps which all go out when any one of them burns out to cause an open circuit. We can see why all the lights go out by looking at Figures 1a and 1b.

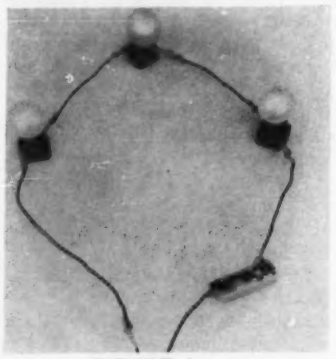
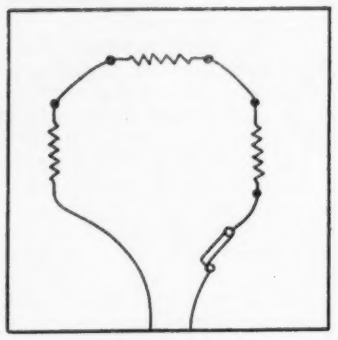


FIGURE 1 a



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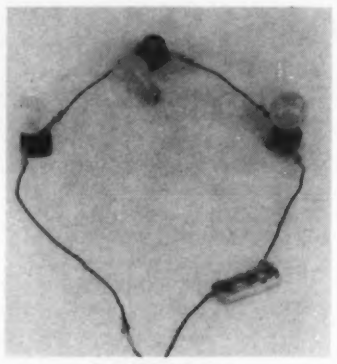


FIGURE 2 a

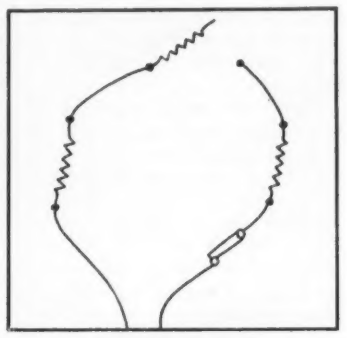


FIGURE 2 b

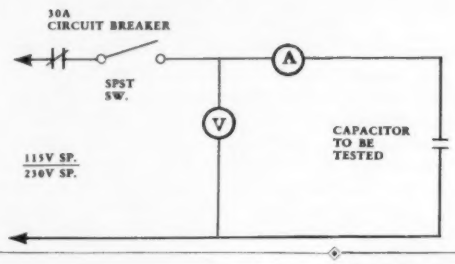


FIGURE 3

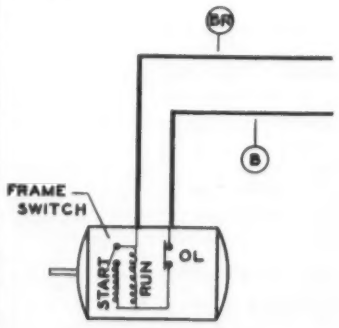
To travel from and to the emf source, the current must pass through each resistance in succession. **Resistors in series are connected end-to-end across a voltage source.**

Remove one lamp and the current stops because the circuit is no longer complete. (Figures 2a and 2b.)

Such a current stoppage can be useful. All switches, for example, must be in series with the devices they control. Protective devices, as fuses and overload protectors, are wired in series so equipment cannot operate when the safety device is electrically opened for any reason.

Notice the fuse, switch, ammeter, and capacitor to be tested are all in series in this circuit taken from a manufacturer's service bulletin. The switch is presently open, so no current can flow from the 115 or 230-volt source.

In the diagram (Fig. 3), taken from a full circuit diagram for an air conditioner, the overload protector (OL) is in series with the power supply. Should the protector open due to excessive current or overheating, no electricity may reach the fan motor. B and BR are color codes for the wires.



FAN MOTOR

FIGURE 4

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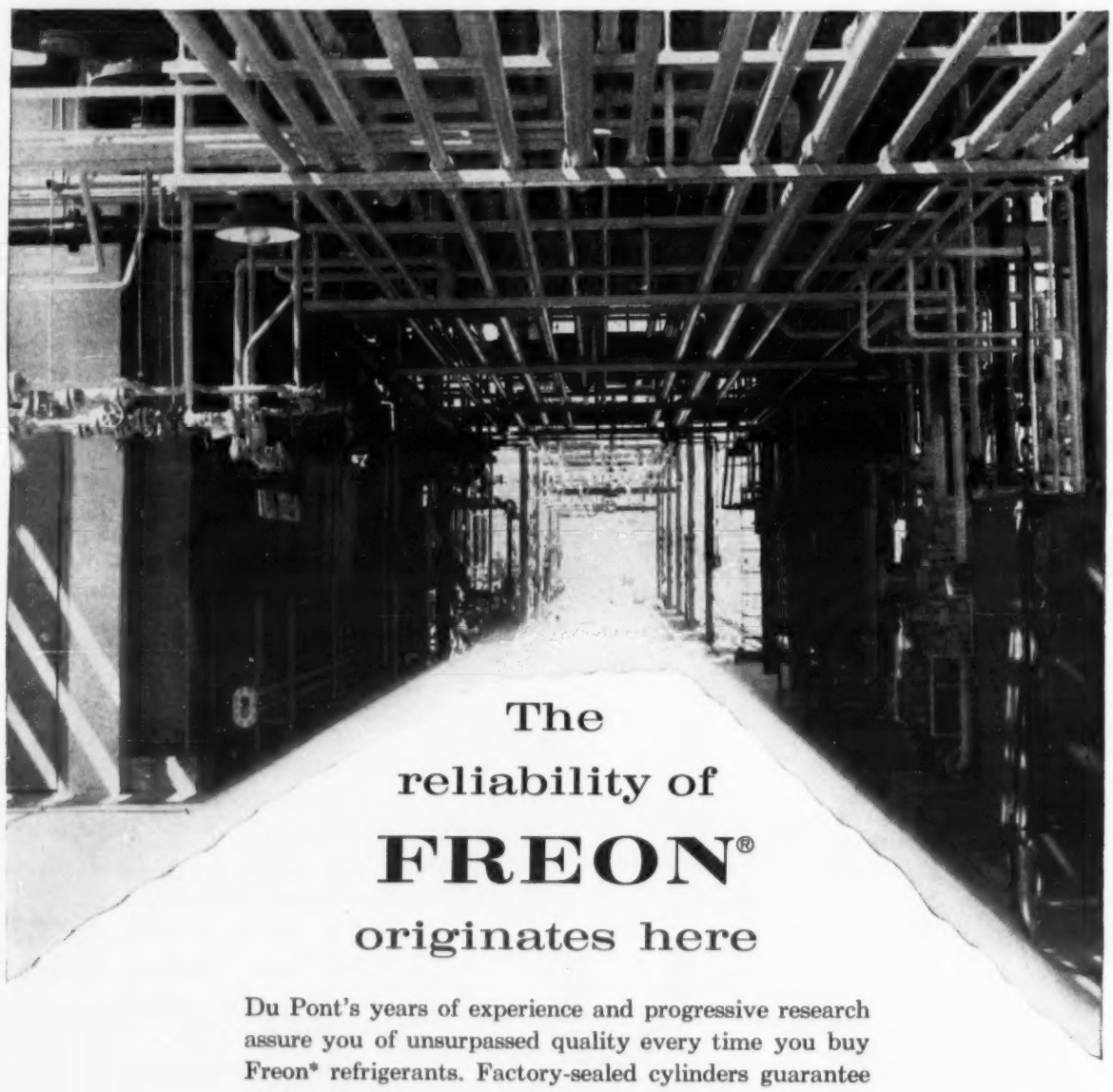

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What about volts, amps, and ohms in a series circuit?

Remember that voltage may be read between any two points on a conductor or resistor and that the amount of voltage used up between any two points is termed the voltage drop.

If three equal resistances, as three 25-watt bulbs are wired in series, the voltage read by a meter at **V-sub-A** (Fig. 5) will be the supply voltage, 120. A voltmeter across a single resistance, **V-sub-B,** will show 40 volts. **V-sub-C,** across two 25-watt bulbs, will show 80 volts, and **V-sub-D,** across all three resistors will again show 120 volts. (The negligible resistance of the wires is ignored.)

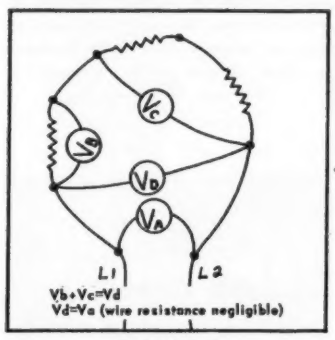


FIGURE 5

The practical effect of voltage drop in a series circuit can be seen in Figures 6a and 6b. Figure 6a shows a simple circuit with a motor operating off 120 volts. A 25-watt bulb placed in series with the motor (6b) causes enough voltage drop to

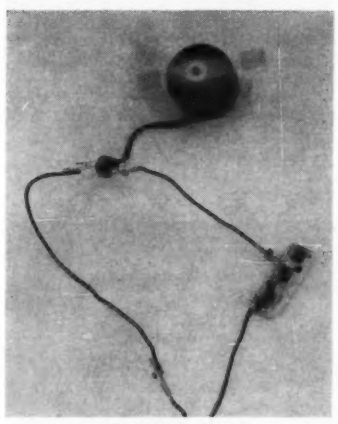


FIGURE 6 a

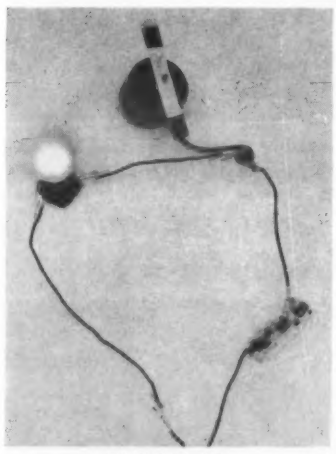


FIGURE 6 b

prevent the motor from starting. Actual measurements on the illustrated circuit showed a 95-volt drop through the bulb, a 28-volt drop across the motor. Twenty-eight volts are not enough to operate a device designed for 120-volt application.

If one 25-watt and one 75-watt bulb are wired in series, the 25-watt bulb glows almost at full brilliance, with a 110-volt drop, while the 75-watt bulb takes the remaining 10 volts without even glowing.

In a series circuit, then, the voltage drop through, or across, each resistance is only part of the total voltage and depends on the ohm-value of each resistor. The sum of these individual IR drops always equals the total applied voltage.

* * *

In a series circuit, the total resistance to current flow is the sum of all the individual resistances. The entire circuit may be treated as a simple circuit in Ohm's law calculations.

If a 75-watt bulb with 194 ohms resistance and a 25-watt bulb with 570 ohms resistance are in series, the total resistance of the circuit is 194 + 570 = 764Ω (Ω, the Greek capital letter **Omega,** is the mathematical symbol for ohms.)

For the entire circuit:

$$I = \frac{E}{R} = \frac{120}{764} = 0.16 \text{ amp}$$

Thus 0.16 amp will flow through each resistor. This amount of current is enough to heat the filament of the 25-watt bulb, but nearly enough to warm the filament of the 75-watt bulb or to start the motor in the example above. It can be similarly determined why a single 25-watt bulb will glow brilliantly at 120 volts, but three 25-watt bulbs in series will each glow only dimly.

* * *

The foregoing discussion has clearly indicated that **the current, the amp draw, is the same in all parts of a series circuit.** An ammeter placed anywhere in the circuit will read the same as at any other point. In the figure below, **A-sub-1** equals **A-sub-2** equals **A-sub-3** no matter how diverse the ohm-values of the separate resistors.

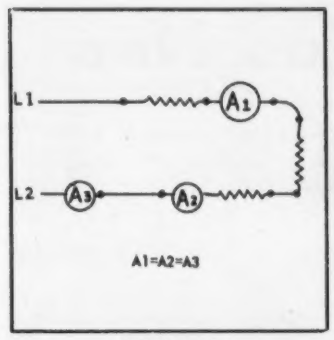


FIGURE 7

Reviewing with a practical example: Each bulb in the old type of Christmas tree lights will glow at full brilliance because the string of lights is designed for series operation.

1. The voltage drop across each of the 8 bulbs is about 15. The bulbs are designed for 15-volt operation; they would burn out at 120 volts.

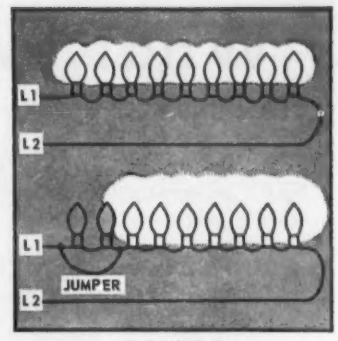


FIGURE 8

2. The total resistance of the 8 bulbs is such that the amp draw of each is exactly the same as that of any other.

3. Short out 2 of the bulbs with a jumper. More than design current will be drawn and the remaining 6, passing more amps, will glow extra bright.

Next: PARALLEL CIRCUITS

SPORLAN

points with pride to... 25 YEARS of PEAK PERFORMANCE

and no wonder... for Sporlan "G" Valves still retain many of the basic design features introduced in 1934, have incorporated many new engineering features and have won greater acceptance, year after year.

And we're proud of the SPORLAN SELECTIVE CHARGES too...for after 25 years, what was originally a Sporlan Engineering innovation has now been adopted universally throughout the entire thermostatic valve industry.

SPORLAN "C" CHARGE
for suction temperatures ABOVE ZERO

SPORLAN "Z" CHARGE
for suction temperatures BELOW ZERO

SPORLAN "X" CHARGE
for extremely low temperatures

Yes... **Sporlan points with pride to 25...** for only Sporlan "G" Valves with Selective Charges can give you Peak Performance on all refrigeration applications!

Your Sporlan wholesaler has the latest literature. Ask for it when you order your next "G" valves...and be sure to order Sporlan Catch-Alls, See-Alls and Solenoids along with them and get Peak Performance Right Down the Line!

SPORLAN VALVE COMPANY
7525 Sussex Avenue • St. Louis 17, Missouri

Export Dept. • 85 Broad Street • New York 4, N. Y.

What Was New

***NEW PRODUCTS GALORE** were on display at the 11th Air Conditioning & Refrigeration Industry Exposition in Atlantic City. On this and other pages throughout this issue the NEWS presents pictures of some of the new products and other displays at the show.*

TECUMSEH PRODUCTS CO.'s new CL 30 air conditioning compressor with built-in anti-slugging device is shown by R. Wood, Tecumseh sales engineer (l.) to Jack Kelly of Runnemede, N. J.

NEW REMOTE 2-HP. AIR-COOLED condensing unit has top mounted condensing coil and propeiler-type blower fan to keep noise in cabinet, John J. Millner (l.), newly appointed sales representative in four southeastern states, tells Fred Pollak, of Floral Park, N. Y. in the C. A. Olsen Co.-Henry Furnace Co. booth.

EXAMPLES OF ALUMINUM castings for refrigeration and air conditioning applications are shown to model Betty Brookman by Jack Cowan, sales manager of Aluminum Foundries, Inc.

Ranco Offers NEW COMMERCIAL CONTROLS for you to specify...

New Double Pole "O" Type Switches

Have wide product application for commercial refrigeration and air conditioning equipment

New double pole, single throw "O" Type Commercial Controls by Ranco are designed for a variety of two pole switching jobs—provide a double break for single-phase operations, simultaneous switching of two circuits, or switching two lines of a three-phase circuit. Available in Single Unit Models for low pressure, high pressure and temperature; and in Dual Models for dual pressure or dual temperature. Controls handle one, two and three-phase motors of ½ through 5 hp.capacity. Safety (High) limit stop may be added to the range screw on the high pressure side of a Dual Pressure Control, or to a Single Unit Control that cuts out on rise in pressure or temperature. Contact your local Ranco wholesaler —or Ranco Incorporated, Columbus 1, Ohio, for more details.

020 SINGLE UNIT CONTROL (Above)
Standard switch action. Contacts open on decrease in pressure or temperature.

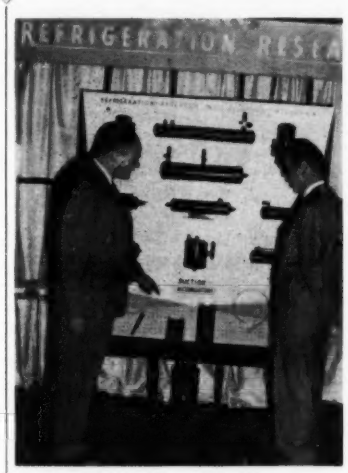
021 SINGLE UNIT CONTROL (Not Shown)
Reverse switch action. Contacts open on increase in pressure or temperature.

Manual reset is available on both 020 and 021 Single Unit Controls.

022 DUAL UNIT CONTROL (At Left)
Combines high pressure with either low pressure or temperature. Both sides operate automatically—or manual reset may be added to either high pressure side only, or to both low and high pressure sides.

To Servicemen: Procure Ranco Service Manual No. 1660 from your Ranco wholesaler. It lists "O" Series Controls; covers nearly 5,000 other Ranco replacement applications. *(Not available from the factory.)*

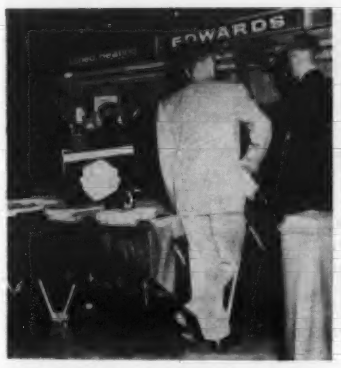
Ranco®
INCORPORATED
COLUMBUS 1, OHIO



NEW SUCTION ACCUMULATORS by Refrigeration Research, Inc. are checked by E. W. Bottum, president (l.) and John Sobieski, factory manager for the firm.

AUTOMATIC ELECTRIC circulation heater displayed by Electro-Therm, Inc. is shown by Walter H. Schmitt (r.) to Paul Hupper of Dayton, Ohio.

JACK WEISS of Philadelphia Truck Refrigeration Service examines new Rubatex overlap door seal as Charles Metz, assistant sales manager of Rubatex, Div. of Great American Industries, Inc. looks on.



MAJOR COMPONENTS FOR BOTH cooling and heating were displayed by Edwards Engineering Corp. In foreground is latest model of the "Airvec" convection-cooled condenser, and in the background is the zone-controlled packaged heating system with zone-controlled motorized valves.

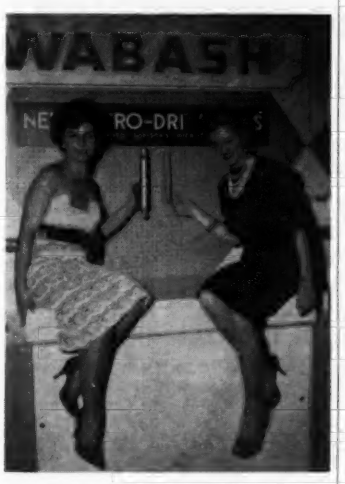
NEW FAN BLADES for blowers shown by Meier Electric Co. included new 6-blade one-piece economical condenser fan and slinger ring; and new 4-blade heavy-duty fan in 20 to 42-in. diameters for package and split system air conditioner and cooling tower applications.

LARGE DIAMETER "AX" flexible metal corrugated tubing assembly designed to handle axial and lateral movement while conveying large volumes of gases or liquids was introduced by Anaconda Metal Hose Div., American Brass Co. G. M. Thomas, Anaconda salesman (r.), shows a sample to John F. Sebastian of Philadelphia.

UNIT COOLERS for variety of purposes and types of mountings, Bohn Aluminum & Brass Corp. "Topaire" models particularly designed for reach-in refrigerators and beverage boxes, draw the attention of J. Weiss, Pal Air Refrigerator Co., New York City.

MARLEY CO.'s "DriCooler" air-cooled condenser in nine sizes from 15 to 100 tons capacity is subject of discussion between H. W. Holt of Pittsburgh (l.), and Bill Nickol of Marley.

Many of the photographs appearing on these pages were taken by Austin Jones, Kerotest Mfg. Co., who has been photographing industry shows and other industry events since the 1930's.



ALL BRASS "MICRO-DRI" dryers filled with Davison "Microtraps" desiccant offered by Wabash Corp. are flanked by Janice Corrado and Shirley Connors.

For Your Reprint Copy

"Short, Short Course in Air Conditioning Fundamentals." By D. C. Schaffer. Mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.
Only 25¢ each.

SALES ENGINEER

for Central System Air Conditioning

Sales Engineer with experience in Central System Air Conditioning and Heat Pumps wanted. You will be trained at the factory, then travel to work with Regional Sales Managers, establishing distributors, dealers, and special projects. Experience in engineering and application desired. Send full particulars of background, experience, photograph and salary expected to

S. J. SEIBERT, Manager,
Air Conditioning Dept.

AMANA REFRIGERATION, INC.
AMANA, IOWA

"WE SWITCHED 100% TO STEWART-WARNER-WINKLER AUTOMATIC HEATING AND COOLING EQUIPMENT"

The Koenig Heating Co., Fort Wayne, Indiana, demonstrates the superior sales power of concentration on a single line of quality products.

Mr. Koenig, owner, says— "We concentrated on Stewart-Warner-Winkler because it became evident that trying to run a heating business like a self-service grocery store wasn't the way to make a profit. Offering a selection of brands merely led to price shopping.

"So we picked Stewart-Warner-Winkler for completeness of line, top engineering, styling and unvarying high quality.

"Another factor which makes this concentration pay off is the assistance given us by the Stewart-Warner District Sales Manager. The factory personnel, too, has a sympathetic understanding of a dealer's problems.

"A good example of product superiority is the Winkler LP (low pressure) Oil Burner. The proved economy and freedom from service troubles of this burner make it a strong profit-maker."

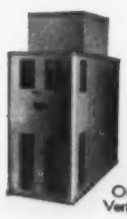
Why not get the facts on the Stewart-Warner-Winkler Direct Factory Franchise? It could be the smartest move you ever made.

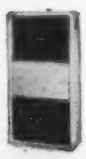
Symbol of SW Excellence

STEWART-WARNER

HEATING AND AIR CONDITIONING DIVISION

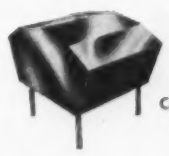
Dept. BA-119, Lebanon, Indiana





Saf-Aire "Safety-Sealed" Gas Heaters

Oil and Gas Basement and Vertical All-year Conditioners



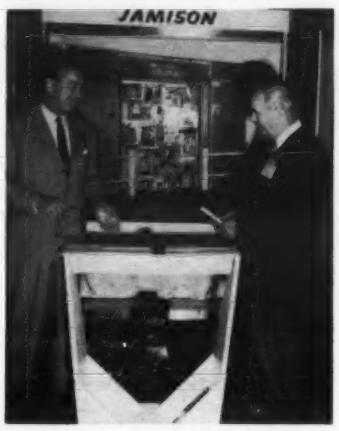
Oil and Gas Cast Iron Boilers

Commercial Cooling Residential and Equipment

Gas Burners

REFRIGERATOR COILS designed to cut down defrosting time were displayed by Tenney Engineering, Inc. Chatting pleasantly are (l. to r.) Sid Shapiro, Tenney sales manager, Israel and Steve Fogel of Fogel Refrigeration Co., and Mary Burns of Tenney.

NEW "AIR-CHRON" temperature reset time switch for air conditioning systems is demonstrated by W. W. Thompson of Automatic Devices Div., American Machine & Metals, Inc. (l.), to Martin Heffler, Fuel Control Engineers, Philadelphia.



DEMONSTRATION SHOWING STRENGTH of new Jamison cold storage door using foam-in-place insulation is explained by David Smurl of Jamison Cold Storage Door Co. (l.), to Cliff Dowson of Toronto, Ont., Can.

CLOSE LOOK AT Binks plastic cooling tower decking is offered by A. G. Stacy of Binks Mfg. Co. cooling equipment division (l.) to Ted Rostock of Kansas City.

with
KARLSON
Automatic
WATER CONDITIONER

This is the simplest and lowest cost method for eliminating the elements that clog and damage ice cubers and flakers, coffee makers and urns, cooling towers, evaporative condensers, etc.

KARLSONITE*, a water soluble complex phosphate in crystalline form, when automatically fed into the water supply, forms soluble complexes with calcium and magnesium, holds them in suspension and prevents precipitation of these elements. Deposits already formed are redissolved. Karlsonite* also forms inert complexes with iron, copper, nickel, manganese and zinc ions. It is harmless to all metals and prevents corrosion and pitting of metals in zeolite soft water. It is harmless to septic tanks—does not build up organic sludge.

Karlson Automatic Water Conditioner is easily installed, and requires no maintenance except infrequent renewal of the Karlsonite* charge.

Get full details . . .
Phone or write . . .

STILES-KARLSONITE CORPORATION
1552 Grand Avenue, Waukegan, Illinois
*Reg. U.S. Pat. Office
WATER CONDITIONING COMPOUNDS AND EQUIPMENT

NEW DUAL-CUP TERMINAL for motor-start and motor-run capacitors catches the attention of Howard Yost (l.) and David A. Mason (r.) both of Mason Supply Co., Columbus, Ohio. Providing them with information are Sprague Electric Co. representatives Rudolf F. Graf (center left) and Ken Blanchard.

NEW HANDY "ALUMI-BRAZE" used in salt bath brazing of air conditioning and refrigeration equipment is discussed by Don Miller of Handy & Harmon (l.), and George F. Wessler of Pleasantville, N. J.

FIND · FIX
Refrigerant* Leaks
FAST
with the
PREST-O-LITE
Trade Mark
Refrigeration and Air-Conditioning Outfit

This one handy, compact outfit is all you need to find and fix refrigerant gas leaks. Sensitive leak detector "sniffs" as little as 100 parts of halide refrigerant* in a million parts of air . . . *in seconds*, pinpoints leaks too small to show up in soapy water. Also included in the outfit are 3 sizes of torch stems for open-flame soldering, heating, and brazing; an adjustable gas pressure regulator; interchangeable torch handle; hose; enameled steel carrying case. Models for use with B or MC PREST-O-LITE acetylene tank.

*ASRE numbers 11, 12, 13, 14, 21, 22, 113, 114

$43.00 COMPLETE

PREST-O-LITE air-acetylene equipment and small tanks are available from your local supplier of LINDE products. See him today. Or write for further information to: Dept. 624, LINDE COMPANY, Division of Union Carbide Corporation, 30 East 42nd St., New York 17, N. Y.

"Prest-O-Lite," "Linde," and "Union Carbide" are registered trade marks of Union Carbide Corporation.

PRE-CUT, PRE-ENGINEERED compressor rack kit is described by Bill Lorden, manager of product application and development for Acme Steel Co. for Betty Brookman.

5-SECOND APPLICATION!
FOR INSULATION ANCHORS and FASTENERS
Use **Stic-Klips®**

- No Surface Drilling
- Quick Fastening
- Strong Positive Bond

Stic-Klips Ⓡ are time and labor saving fasteners for attaching insulation, strapping, metal lath wall fixtures, wiring and conduit to curved or flat, metal or masonry surfaces.

Application takes only seconds. All you do is apply a thin coat of Stic-Klip Ⓡ adhesive to the base of a Stic-Klip Ⓡ fastener with a putty knife. Apply another thin coat as primer base on porous surface area. Place Stic-Klip Ⓡ fastener to primer base until adhesive fills holes. Clean off excess adhesive with putty knife.

Write for your application bulletins, Today!

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94 Regent St Cambridge 40 Mass

Atlantic City Show Highlights

Many of the photographs appearing on these pages were taken by Austin Jones, Kerotest Mfg. Co., who has been photographing industry shows and other industry events since the 1930's.

"KLIXON" SERVICEMAN REPLACEMENT kits of motor protectors and relays are shown by Richard Parker, manager of the parts department, Metals & Controls Div., Texas Instruments, Inc. (l.), to Douglas Funk of Roche & Hull, Inc., Hagerstown, Md. Thermal and electrical hermetically sealed protective devices were displayed.

NEW AEROQUIP self-sealing coupling is explained by M. W. Brandau, director of market development for Aeroquip Corp. (l.) to J. E. Moore of Ronco Corp.

GENERAL CONTROLS CO. will soon have complete controls for the heat pump system, George Deyo (l.) and Ray Wheeler (r.) tell V. W. Tipton of Deland, Fla.

HAPPY TO TELL Rod O'Flaherty of Refrigeration Service Supply, Cleveland (l.) about the new G-E A-C Alumalytic capacitors for low-loss motor start service are a quartet of General Electric Co. representatives (from l. to r.) Don Mullins, Walter Bakes, Fred Reynolds, and Jack Mauer.

NEW 10-TON ROOF MOUNTED air conditioner can be balanced on a single beam, Murray Kabili, chief engineer for Typhoon Air Conditioning Co. (l.), tells Harry H. Cobe of Manchester, N. H. (center), and Herbert Delin of West Hempstead, N. Y.

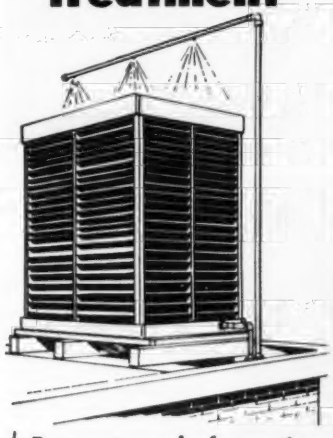
POINTING TO A warm air furnace humidifier made by Walton Laboratories, Inc., Bob Lewis, Walton vice president, explains to William C. Walker, Jr. of Lindenwald, N. J. that in areas with severe hard water conditions, it can be supplied through the new demineralizer on the lower right. Demineralizer on left is for manually filtered portable humidifiers.

DEMONSTRATION BOARD showing life test of actuating diaphragms in thermostatic expansion valves is explained by R. N. Meyer of Alco Valve Co. (l.), to Tom Hildreth, Coolerator project engineer.

DISCUSSING NEW M-H SEQUENCER designed to permit maximum compressor operation and minimum strip heater operation for heat pumps, and gradual sequencing of circuits for electric furnace are L. L. Smith of American-Standard (l.) and R. H. Locke, Minneapolis-Honeywell Regulator Co. market manager.

anco

cooling water treatment



✓ *Prevents scale formation*

✓ *Protects Metals against rusting and pitting*

ANCO Cooling Water Treatment is specially formulated to prevent scale, rust and pitting in new or recently-cleaned condenser or cooling towers. Packed in convenient cans, ready to use, it is available in sizes to suit the capacity of your system. Just place the can in the condenser pan or tower basin where there is average agitation and the scale and rust inhibiting formula goes to work. The contents slowly dissolve, feeding the correct amount of treatment for about one month. Your system stays clean, operates at economical peak efficiency. Ask your supplier about it today.

Condenser Cleaner

Removes scale and rust from condenser tubes, restores operating efficiency. A dry formula that simply dissolves in the sump while system operates. Try it once!

SPECIALISTS IN MAKING WATER BEHAVE

Anderson Chemical Company, Inc.

Box 1424 • Macon, Georgia

Memphis, Tenn. • Box 2432 • DeSoto Station

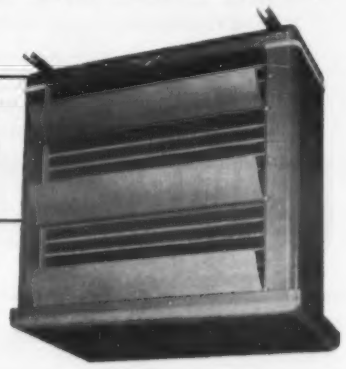
LARKIN

QUALITY ENGINEERED TO DO A BETTER JOB

HALF-TURRET HUMI-TEMP
Model HT

This forced convection unit is ideal for walk-in coolers and cold storage rooms. Available in capacities from 2500 to 10600 Btu/hr at 10° TD. Mounts flush to wall and ceiling for maximum head room and storage space. Engineered to provide 100% usage of coil surface. Has built-in heat exchanger, patented LARKIN cross-fin coil, permanently lubricated motors, fully insulated drip pan.

STANDARD HUMI-TEMP
Model MT



Available in capacities from 2400 to 32000 Btu/hr at 10° TD, which accurately balance condensing units of the same capacity. Will maintain proper temperature and humidity in walk-in coolers and many other applications. Has LARKIN cross-fin coil, insulated non-sweat drip pan, adjustable louvers, permanently lubricated motors. Easily serviced if necessary.

Hundreds of thousands of LARKIN units are in use successfully from coast to coast and in many foreign countries proving their dependability.

See your wholesaler or write for catalog 1049 B

LARKIN COILS INC.

519 Memorial Dr., S.E. P. O. Box 1699

ATLANTA 1, GEORGIA

New Items In Atlantic City

NEW REACH-IN DISPLAY refrigerators now available in color are shown by E. A. Vettorino, president of Peerless Equipment Corp. (l.), to O. S. Parrish and R. Chamness of the Aluminum Diecast Foundries, Inc.

LEHIGH "AIR WALL" to prevent loss of cold when storage doors are opened is examined by Richard F. Burke, sales manager for Lehigh Mfg. Co. (l.), and Robert Wilson, quality control engineer.

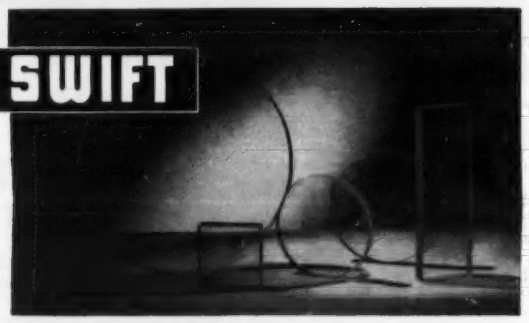
SUSAN GILBERT LOOKS on as Austin Jones explains to William J. Van Buskirk, Albany, N. Y. wholesaler (r.), the Kerotest testing manifold with new type gauges designed to prevent damage from extreme pressures.

NEW CAPACITOR TESTER that electronically provides a quick, easy means to test all types of capacitors and condensers of all voltages is demonstrated by Edward Barusch, special projects engineer for Watsco, Inc. (r.), for Joseph G. Litter, service representative for Worthington Corp. and Frederick Hurwich of Miami, Fla. (second and third from left). Stuart J. Wagner, Watsco sales manager, is at left and William Wagner, president, second from right.

NEW IMPACT EXTRUSION disposable container for 1 lb. and 2-lb. quantities of refrigerant gas is shown by R. H. Israel, sales manager of Virginia Smelting Co. (l.), to Robert Whitney of Williams & Co., Inc., Cleveland.

JOB-SITE ASSEMBLY of air filters is simple, says Betty Rowland as she demonstrates how product developed by Air Con Filter Co. is assembled.

SPORLAN system cleaner display featuring adaptor blocks absorbs the attention of Ed Sullivan (l.) of Sporlan Valve Co.'s Chicago office and Philip Taylor of C. P. Payson Co.



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PYREX SIGHT GLASSES

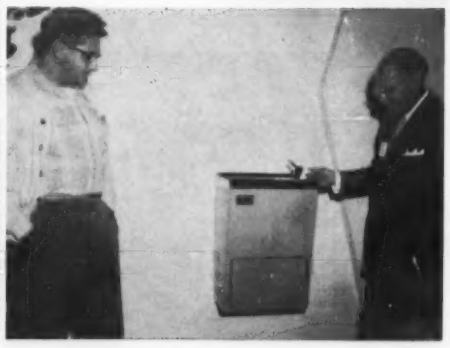
We can supply perfectly true circles, precision-ground from heat-resistant polished plate glass. Used by chemical companies from coast to coast —resist clouding, pitting, chemicals (except HF and strong hot caustic solutions).

Squares, rectangles or odd shapes in 8 thicknesses (⅛" to 1"), sizes up to 24" x 60", also available for immediate shipment. Write, wire or phone for bulletin or quotation.

SWIFT *Glass Division*
SWIFT LUBRICATOR COMPANY, INC.
1 Glass St., Elmira, N.Y.

Many of the photographs appearing on these pages were taken by Austin Jones, Kerotest Mfg. Co., who has been photographing industry shows and other industry events since the 1930's.

NEW MOBILE SCHOOL milk cooler that can be wheeled from service to serving area is shown by Ray W. Senechal, sales manager of Beverage-Air Sales Co. (l.), to Frank Kelly of Wallwork Bros., Newark, N. J.



SELF-CONTAINED WALL HUNG water cooler by Temprite Products Corp. garners the attention of E. D. Makdad of Altoona, Pa. (l.), and James W. Archibald, Temprite sales manager.

SPECIAL DELIVERY BY ROCKET?

No, we aren't using the new ballistic missiles yet, but maybe some day. In the meantime, Harry Alter gives you the fastest possible service. Your orders are handled with *careful* speed. Complete inventories and streamlined methods assure truly snappy service.

We're Real Specialists in
REFRIGERATION • AIR CONDITIONING • ELECTRIC MOTORS
SUPPLIES and PARTS

SAVE MONEY, time and effort by ordering from our new *Dependabook*, the most complete catalog of all. 232 pages. Over 10,000 items carried in stock. *Wholesale only.* Your orders filled really fast by mail, or they can be picked up at one of our six big warehouses.

Write on your letterhead for the 1959 DEPENDABOOK...
Also our monthly Flyer of surplus and close-out Bargains.

THE HARRY ALTER CO., INC.

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FREE PARKING AND FAST COUNTER SERVICE AT THESE 4 BIG WAREHOUSES

NEW "M" LINE of filter-driers is shown by J. G. Beierlein, president of the McIntire Co. (l.), to John H. Jeffries of Nutley, N. J.

GOING TO THE TOP for information about the new Copeland 6-cylinder, 30-hp. compressor, Israel Kramer of Kramer Trenton Co. (l.) contacts Frank Gleason, Copeland Refrigeration Corp. president.

NEW UNIT COOLER with electric defrost is shown by Frank Klaas, vice president of Refrigeration Appliances, Inc. (l.), to Ed Cassidy of Brownell Associates, "Krack" representatives.

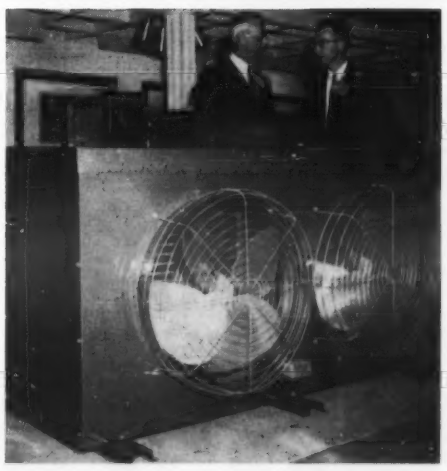
TAYLOR-BURCH 1½-hp. low temperature packaged refrigeration system for temperatures ranging from 45° F. down to -20° F. was newest item in Taylor-Burch Refrigeration Products, Inc. booth. Martin Burch, vice president, poses with the unit.

JANET MARCH shows off Mueller Brass Co.'s new "Viewmaster" liquid indicator. In background is Mueller's new "Drymaster" refillable drier.

AVAILABLE TO WHOLESALERS in its new sales program are the motor starting relays and complete line of controllers offered by the R.B.M. Div., Essex Wire Corp. Discussing the products and program are Jack Glou, Central Service Supply Co., Scranton, and William Hopkins of R.B.M.

"ROTA-SHELF" special cooler for beverages was one of special refrigerator items shown by Gem Refrigerator Co.

COOLING TOWER water treatment method, using "Micromet" plates, was demonstrated in the Calgon Co. exhibit.

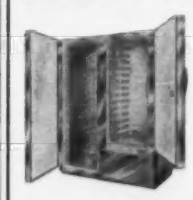


NEW UNIT COOLER having capacity of 62,000 B.t.u. at 10° temperature differential is designed for ceiling mounting. But it is displayed upside down for convenience sake, Robert C. Smith of Larkin Coils (l.), tells Henry Caldwell of Worthington Corp.

NEW BRUNNER 30-hp. water-cooled, semi-hermetic condensing unit with capacity control gets the once-over from Marilyn Bross in the Dunham-Bush booth.

HANDY TUBE BENDER for ⅜-in. to 1⅛-in. tube sizes drew attention of installation and service contractors in the Holsclaw Bros., Inc. exhibit.

BAKER'S FREEZER



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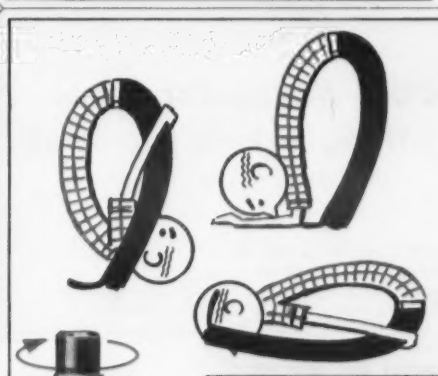
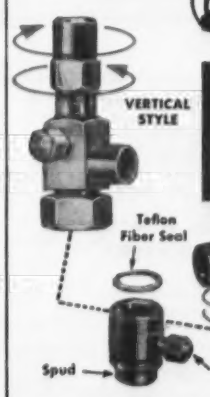


TWISTS OR TURNS IN ANY DIRECTION



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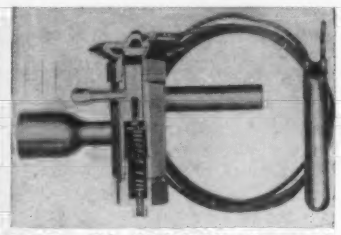
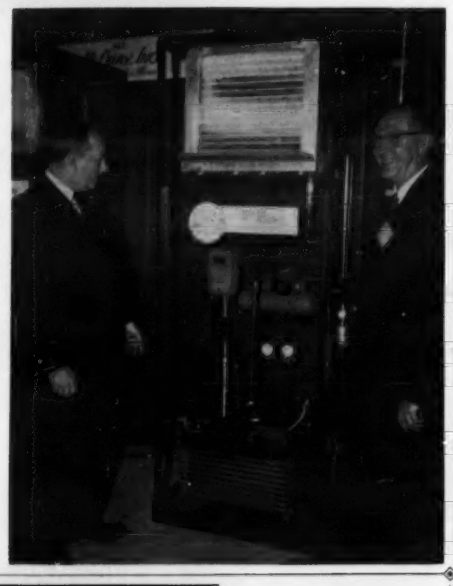
SPECIAL WHITE FLEXIBLE PLASTIC finish on "Armaflex" insulation was exhibited to show visitors by Richard Voorhees, Armstrong Cork Co., sales engineer.

ENJOYING A RECITATION on General Electric Co.'s new low-cost leak detector for servicemen by Anne Wolfe are three gentlemen from Mason Supply Co. of Columbus, Ohio and Wheeling, W. Va. From Anne to right they are Raymond Leavy, Ralph Parker, and Howard Yost.

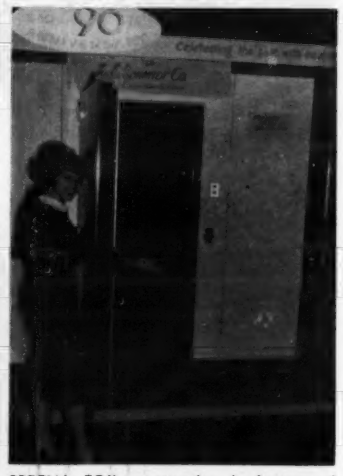


MODEL 214 "FLAT-TOP" thermostatic expansion valve designed to withstand more than 100,000 life cycles of extreme pressure fluctuations in heating, cooling changeover was star attraction at Controls Co. of America booth.



THERMEX HOT GAS DEFROST unit displayed by McQuay, Inc. is examined by Ted Stikeleather, sales engineer for McQuay (l.), and Les Ost, manager of Refrigeration & Industrial Supply Co., Minneapolis.

THREE-WAY REVERSING VALVE for heat pump and hot gas applications is proudly displayed by Hal McPherson, consulting engineer for Hubbell Corp.



SPECIAL COIL construction is feature of this C. Schmidt Co. walk-in refrigerator. Coil is combination of gravity coil and blower coil, said to provide non-drying air circulation.

MOBILE SHELVING offered by Market Forge Co. is designed to move meat products into walk-in refrigerators.

ALL ALUMINUM roof-mounted 15-ton heating and cooling unit introduced by American Coils Co. is studied by C. M. Hatcher, ACI sales manager (l.), and Bernard Soothcage, ACI sales engineer.

HIGH SPEED 3,450 R.P.M. 2-pole motor ¼-hp. compressor in the new Bendix-Westinghouse "Ovaline" compressor series draws some serious discussion from Don Wood, B-W sales manager, and Robert Duke of San Antonio, Texas.

IN KESCO PRODUCTS CORP. booth Mrs. Ruth Kesselman and Samuel Kesselman pose with model of new 50-ft. head, cast aluminum, automatic condensate disposal pump.

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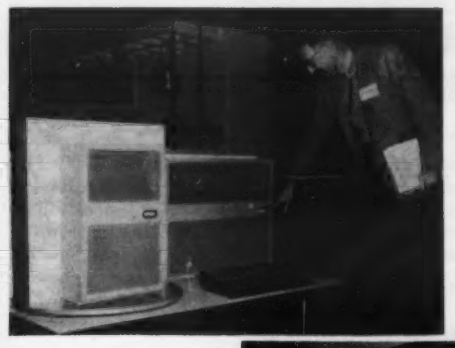
What Was New
At Atlantic City Exposition

30-TON PACKAGED water chiller with twin compressors was a "big equipment" item shown by Airtemp Div., Chrysler Corp., being viewed here by Paul Penn of Penn Controls, Inc.

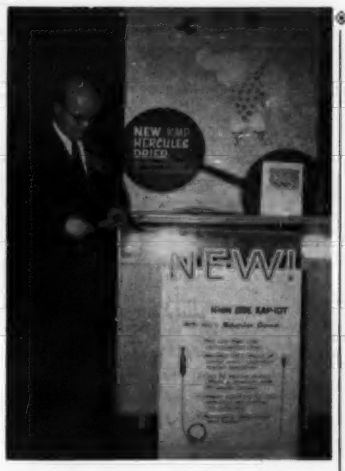
NEW 3-TON REMOTE heat pump with "Lectrofilter" electrostatic filter on the indoor section engross David S. Louria of Trenton, N. J. (l.), and P. D. Williams, regional manager for Coolerator Div., McGraw Edison Co.



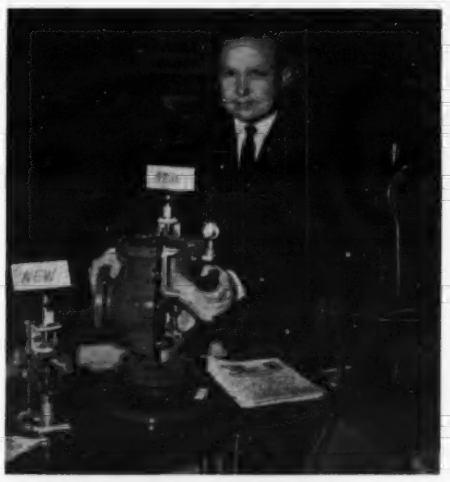
NEW FAN COIL units for individual units, for horizontal or vertical airflow with air delivery at 150 or 300 c.f.m., are these "Spotaire" models shown by the National-U.S. Radiator Corp., and being checked over here by Jess Rauch of Rauch & Monroe, Oakland, Calif.

IDENTICAL REPLACEMENT door gaskets for refrigerator models of all types is the new "Identi-Line" being offered by Jarrow Products Co.

MAGNETIC SPECIAL PURPOSE CONTACTOR for air conditioning and refrigeration applications introduced by Furnas Electric Co. is discussed by G. W. Smardon, Furnas sales engineer (l.), and Bob Brust.



NEW HIGH SIDE "KAP-KIT," a molecular sieve drier with predetermined capillary length and flared connection was emphasized by Kenmore Machine Products Co. John M. Lents, sales manager, holds a Hercules 2-ton capacity drier.



THREE-WAY CONDENSING water regulator for cooling tower systems to permit operation in cold weather without low condensing pressure problems was star attraction at Refrigerating Specialties Co. booth. Charles C. Hansen, chief engineer, poses with the regulator.

Many of the photographs appearing on these pages were taken by Austin Jones, Kerotest Mfg. Co., who has been photographing industry shows and other industry events since the 1930's.

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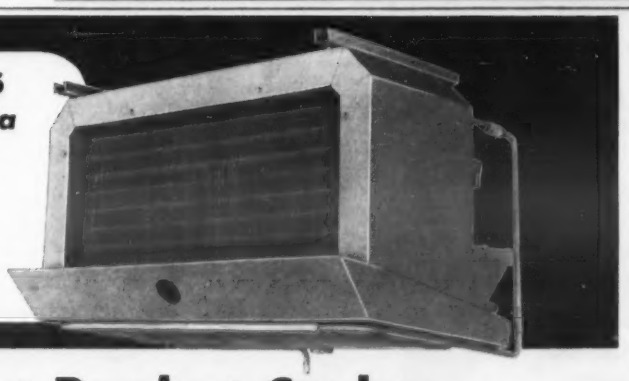

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Water Regulating Valves For Cooling Equipment (2)

In this series of articles, R. H. Luscombe, Penn Controls, Inc., reviews the basic principles and applications of water regulating valves used on water-cooled refrigeration equipment. Luscombe touches on valve construction, application products, and service. Part One appeared in the Nov. 2 issue and Part Three will be published in a later issue.

By R. H. Luscombe, Penn Controls, Inc., Goshen, Ind.

Where water temperature is consistently low, combined with water pressure that is consistently high, experienced installers select valves one size smaller than factory recommendations. The reason is to make the smaller valve open wider to reduce "wire drawing" and seat erosion and obtain longer seat life.

Where water pressures are in excess of 75 p.s.i., installers frequently apply water pressure reducing valves for the same basic reason.

To select a valve of proper size, proceed as follows:

1. Determine the heat rejection of the condenser at maximum load. This is usually 15,000 B.t.u.h. or 250 B.t.u. min. per ton.

2. Calculate the total gallons of water per minute required to absorb the heat from the condenser. Use manufacturer's recommendations or figure back from maximum condensing temperature desired. If we assume maximum condensing temperature is to be 105° F.—water discharge temperature will be about 95°. Subtract from this the maximum inlet temperature of the water (under full load conditions). If the water inlet temperature is 75°, then the water can absorb a 20° rise in temperature.

Use this formula:

$$\text{Gallons per minute per ton} = \frac{30}{\text{water outlet tem.} - \text{inlet tem.}}$$

$$\frac{30}{20} = 1.5 \text{ g.p.m./ton.}$$

3. Next, we must know the water pressure available and the water pressure drop through the condenser at full load water requirements. Suppose the water supply pressure is 40 p.s.i. and piping is adequate to deliver 40 p.s.i. to the condenser. Then assuming the condenser pressure drop is 15 p.s.i.—this leaves 40 minus 15 p.s.i. for pressure drop through the valve—**if the condenser discharges directly to the drain.**

Suppose, however, that the waste water from the condenser must pass through a considerable length of pipe and fittings and must flow uphill to the drain. This will create a "back pressure" on the discharge side of the valve in addition to the condenser pressure drop and the allowable pressure drop through the valve will be substantially reduced.

Assume this piping drop is 5 p.s.i. Then the allowable drop through the valve alone is 20 p.s.i. Let us also assume that 105° F. maximum condensing temperature is acceptable. On R-12 this is 126 p.s.i. If the R-12 valve is set to open at 105 p.s.i. the head pressure increase above the opening point is 21 p.s.i.

Refer to the selection chart (Fig. 2). If the load is 10 tons and we have determined that 1.5 gal/min/ton are required, we need 15 gals. per minute. Run a horizontal line through 15 gals. on the upper chart. Now run a horizontal line at 21 p.s.i. on the lower chart until it intersects the curve at 20 p.s.i. pressure drop. From this point run a vertical line until it intersects the 15-gal. line in the upper chart.

The intersection will be on or near the curve for a ¾-in. valve size.

Notice that if the maximum water temperature was 85° at inlet, we would need 30 gals. per minute on this job—and the point would fall between a 1 in. and 1¼-in. valve. We would select a 1¼-in. size.

If the job was on R-22 we would use the chart in the same manner except we would use a 35 p.s.i. head pressure increase horizontal line on the lower chart and proceed as before.

Usually the same size valve is required on R-22 as for R-12 but this is not necessarily so. Use the valve manufacturer's flow charts and figure each job as outlined above for best results. Many valve are now available with "all range springs" so that the same valve can be used on R-12 or R-22.

Some special models of water regulating valves are made "reverse acting"—that is, they are normally open—but **close on pressure rise.** In heat pump applications water-to-water or water-to-air, a reverse acting valve with a low-pressure range spring is used to regulate the flow of heat source water through the heat exchanger during the heating cycle. The purpose is to provide maximum extraction of heat by permitting the water to be chilled close to 32°.

When the system is changed from heating to cooling, this reverse acting valve closes and a standard direct acting valve piped in parallel (but with its bellows pressure connection taken off at the same point as the reverse valve) regulates water flow through the heat exchanger which now acts as the condenser.

The real purpose of a water valve is to maintain the head pressure high enough for good performance—within the 90° to 105° condensing temperature range. In cooling tower practice the water temperature varies widely—possibly 40° to 85°. Standard two-way "waste water" regulators are sometimes used on cooling tower applications for the purpose of keeping the head pressure within normal limits. Generally they have not been specified because they restrict flow to the spray nozzles creating increased maintenance on the nozzles and extra accumulation of scale on the wetted surfaces.

Increased use of cooling towers on commercial refrigeration and air conditioning has emphasized the need for a special type of valve for cooling towers involving flow regulation from head pressure on a **three-way basis.** A three-way valve is shown in Fig. 3.

A three-way valve senses the compressor head pressure and allows cooling water to flow to the condenser, to by-pass the condenser, or to flow to both condenser and by-pass line in order to maintain correct refrigerant head pressure.

One valve disc opens and modulates flow to the condenser to maintain head pressure within normal limits. As this disc opens another disc carrying water from the same inlet moves toward the closed position. Water that is restricted from the condenser is diverted through a by-pass line around the condenser to the tower.

The nozzles and wetting surfaces receive full flow regardless of the water temperature and head pressure.

In cooling tower practice the allowable pressure drop through the valve is usually less than on "waste water" jobs because of the electrical energy consumed by the circulating pump and cost of the pump. Designers' viewpoints vary but in general the valves are selected to provide the necessary water flow at a maximum pressure drop in the range of 7 to 15 p.s.i.

R-12 and R-22 valves are of slightly different construction. The head pressure change on an R-12 valve from opening point of condenser port to closing point of by-pass port is about 35 p.s.i. With R-22 it is about 50 p.s.i. These valves correspond generally to the difference between 90° F. and 105° F. condensing temperatures. Opening points of condenser port on R-12 valves are set at 95 p.s.i. On R-22 they are set for 165 p.s.i.

The application and operation of three-way cooling tower valves is substantially the same as two-way waste water valves. Fig. 4 illustrates a typical application.

(To Be Continued)

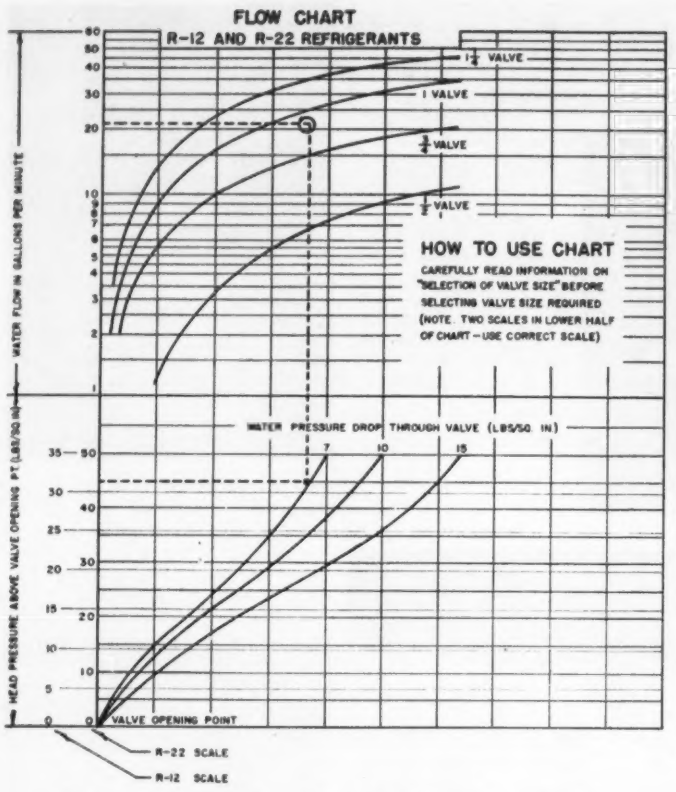
FLOW CHART
R-12 AND R-22 REFRIGERANTS
1¼ VALVE
1 VALVE
¾ VALVE
½ VALVE
HOW TO USE CHART
CAREFULLY READ INFORMATION ON "SELECTION OF VALVE SIZE" BEFORE SELECTING VALVE SIZE REQUIRED (NOTE TWO SCALES IN LOWER HALF OF CHART – USE CORRECT SCALE)
WATER FLOW IN GALLONS PER MINUTE
WATER PRESSURE DROP THROUGH VALVE (LBS/SQ. IN.)
HEAD PRESSURE ABOVE VALVE OPENING PT. (LBS/SQ. IN.)
VALVE OPENING POINT
R-22 SCALE
R-12 SCALE

FIG. 2—Selection Chart for picking size of water valve needed.

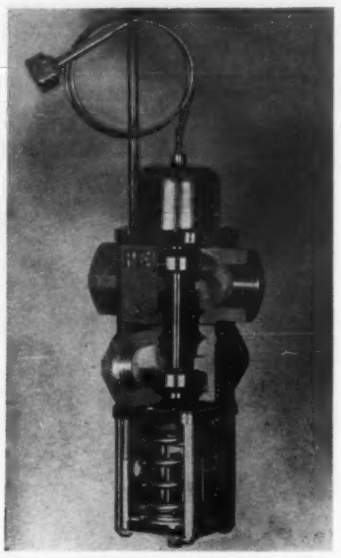

FIG. 3—Three-way water valve which allows maintenance of relatively constant head pressure with varying water flow.

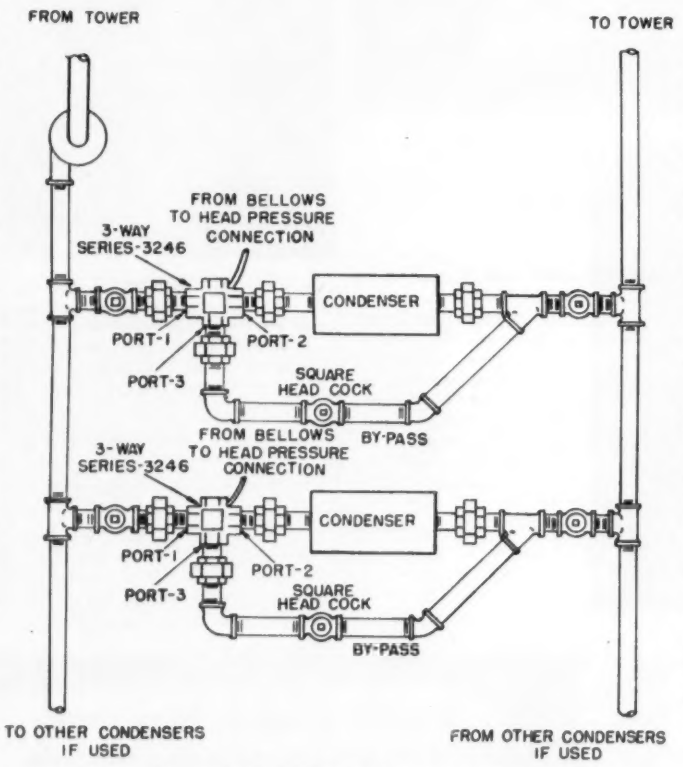

FIG. 4—Typical application of three-way valves.

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They'll Guide NCRSA In Coming Year

NCRSA OFFICERS AND DIRECTORS for 1960 include (seated l. to r.) Marie Lawton, executive secretary; Ray Winther, president; Dudley Cawthon, first vice president; Donald D. Denny, second vice president; and E. B. Ward, third vice president. Standing (l. to r.) are directors James A. Scatena, Max B. Udell, Foster Van Cleve, Aubrey J. Deal, and Wilbur S. Hoyt. Absent are H. E. Humphreys, treasurer, and directors Robert Trudeau, R. L. Eggert, Richard A. Rauch, and Cedric Evans.

NCRSA Talks Stress Better Methods--

(Concluded from Page 1, Col. 2)

the emphasis on cooperation to attain desired ends.

In his swan song as president of the association, Milton I. Schwartz of New York City, asserted that "today the success of any business enterprise depends largely upon the ability of its management to stabilize costs and selling prices and to keep quality and service unimpaired.

"Doing business is so complex an undertaking that there must be some force to steady it," he declared. "We need standards to guide us, lines of conduct to follow, so that business development will be a matter of knowledge rather than guess work. We must have sound, stable policies and pause a little and think them out before we change."

A highlight of the convention was a short course on business budgeting by Emol Fails, executive secretary and director of research of the Heating and Air Conditioning Research and Development Association in Raleigh, N. C.

'Watch Small Items!'

"It's the small things that cause business losses," Fails told his audience. He referred to those small overhead items in the budget that may represent only .4% of sales, or $10 a week.

"One way to make money," he asserted, "is to keep an eye on every actual increase in percentage in budget items over the budgeted amount, no matter how small. It is the large number of these infinitisimally small increases that really hurt without you being aware of it."

Dudley Cawthon, Miami distributor, urged commercial refrigeration equipment manufacturers to emulate the automobile manufacturers by developing the attitude of selling through their distributors rather than to the distributor.

He suggested that they help their distributors in an over-all program of managing their business and that they organize a factory service department to serve the distributor and his customer "promptly and with a smile."

One of the talks that aroused considerable comment around luncheon tables was given by Aubrey Deal, top Warren Co. distributor in Jacksonville, Fla.

"How does he do it?" was the amazed question that occurred to many distributors after Deal revealed that he develops a $1.2 million gross with an organization of 12 persons.

Deal pointed to fellow distributors that the "mom and pop" store still represents their most profitable market.

"We have to have the big store jobs," he admitted, "but we make more profit on the small store" through selling complete modernization programs that may run only to $15,000 per store.

"If we keep these stores in business against chain competition," he commented, "we will build a nucleus for future business for ourselves."

Ray Winther, San Francisco distributor, reminded his audience that "the quality of our job, the actual performance after the job is completed, is the determining factor in giving the customer his values.

"As distributors," he said, "we can increase the importance of our position in the industry and to our customers by selling performance.

"A perfectly performing job is not an accident. It is sold, planned, installed, and serviced by a distributor who gives his customer a real value."

In a breezy style, John Saywell, president of Edmonton (Alberta, Can.) Butchers' & Packers' Supplies, Ltd., outlined how his distributorship has developed new customers outside the food store field. Or, as he put it, "What we have to do in the bush country to survive."

Eskimos Are Customers

Noting that "We do sell refrigeration equipment to the Eskimos," Saywell explained that his firm covers a 2,000-mile territory extending north of the Arctic Circle to Aklavik and south to Calgary.

In seeking new customers, he pointed out, his company has gone into the restaurant and cocktail-lounge field; developed leads through the Chambers of Commerce and Mines and the Builders Exchange; secured business from the provincial government (designed trailer kitchens for feeding road-building crews in remote areas); got into the bulk milk field; sold equipment to churches and missions and for the government defense program; and has even sold some air conditioning equipment, though, he wryly admitted, its advantages in the Far North are not too apparent.

In two round-table conference sessions, distributors discussed their methods of sales training and supervision and cost control.

Each session lasted about one hour and a half. During the first one, the conferees exchanged ideas on selection, training, and compensating of salesmen; sales meetings, sales control; and sales supervision. The cost-control session covered warehouse and office expense; reducing receivables and cutting down the collection period; the service department; and delivery and installation.

Conference table chairmen then reported on the ideas and conclusions reached by their groups. The round-table sessions proved a popular feature, with requests made that it be repeated at the next convention.

George A. Lucas, president of Allied Store Engineering Corp., East Hartford, Conn., cited the rapid growth of his own firm to illustrate his point that "in spite of our problems," the commercial refrigeration distributor represents a dynamic new growth industry.

Urges 'Talent-Scouting'

Asserting that the "greatest growth is with good men," Lucas proposed an industry-upgrading program involving "talent-scouting" for such men; educational, training, and financial aid for qualified prospects; and locating areas where distributors are needed.

Lucas said he believes that with such a program, "we can have a new growth industry that will attract and hold the highest caliber men."

In another talk, James A. Scatena, general partner, Scatena York Co., San Francisco, tackled the matter of "this so-called monster known to us as direct factory sales—not on the basis that it is entirely the fault of the manufacturer, but on the basis of the distributor's responsibility in bringing about this mess, as well."

Scatena declared that successful distributors "have been plagued, or will be, along with the distributors who caused it, with this so-called 'manufacturer's direct-sales policy' to the small chains of less than 10 stores and sometimes even a single store."

In making some specific suggestions on this matter, Scatena stated that "Everything seems to revert back to the grim reality that manufacturers and distributors have to solve this problem together. And it can only be solved by truth and faith in each other."

Elect New Officers

At the final session NCRSA elected Ray Winther of South San Francisco, president; Dudley M. Cawthon of Miami, first vice president; Donald D. Denny of Dayton, second vice president; E. B. Ward of South Bend, Ind., third vice president; H. E. Humphreys of Concord, N. H., treasurer; and Marie Lawton, executive secretary.

New directors elected for three-year terms were Richard A. Rauch of New York City, Foster Van Cleve of Fort Worth, Texas, and Cedric Evans of Richmond, Va.

Emerson Electric Forms New Sales Region

ST. LOUIS — A new southwestern merchandise sales region has been established by Emerson Electric Mfg. Co., it was announced by Dick Loynd, merchandise sales manager for the firm.

"Due to the rapid growth in the company's merchandise sales in the southern states, Emerson Electric is intensifying and enlarging its sales representation in more concentrated sales areas, which brought about the establishment of this new southwestern region," Loynd explained.

Jack Rogers, who has a 20-year sales experience background with the company, was appointed regional sales manager for the new area.

Bill Richard, who has five years' company experience in the lighting field, was named lighting specialist for the new region.

Salesmen assigned to the new region are Jack Drake, Charles Strauss, Dennis Cassidy, Gordon Laursen, and Gerald Andrews.

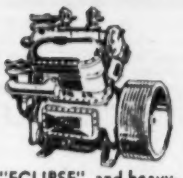
Emerson Electric merchandise sales consist of room air conditioners; dehumidifiers; industrial and consumer fans; kitchen ventilating hoods and exhaust fans; a complete line of electric heat; installed and portable electric heaters; recessed and surface mounted lighting fixtures; and Rittenhouse chimes, intercoms, and chime clocks sold through Emerson Electric.

The new sales region, formerly a part of the over-all southern region, includes all of New Mexico, Oklahoma, Arkansas, the northern part of Mississippi, western Tennessee, and western Louisiana.

Yes!

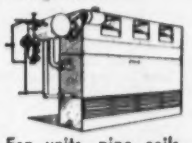
We have all the components

FRICK DISTRIBUTORS *and* FRICK USERS can select from the industry's greatest line of compressors, condensers, coolers, coils and controls.



"ECLIPSE" and heavy-duty compressors: sizes up to 1,000 tons refrigeration.

They also get the advantages of many exclusive Frick engineering developments, a few of which are illustrated. When you or your clients need air conditioning, refrigeration, ice making or quick freezing equipment, in any commercial or industrial sizes, check first with Frick.



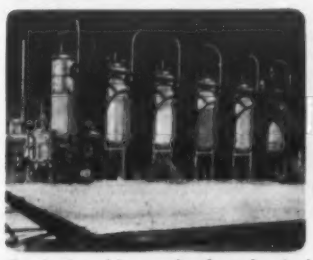
Fan units, pipe coils, shell, zig-zag and other types of coolers for air, water, brine, etc.

DEPENDABLE REFRIGERATION SINCE 1882
FRICK CO.
WAYNESBORO, PENNA., U. S. A.

Valves, Fittings and Controls, for manual or full-automatic operation.

Prestfin coils have 9 to 13 times the surface of bare pipe, assure high humidity in storage. Also remove superheat from hot gases.

Evaporative and shell-type condensers.



Synthetic rubber and other chemical plants find Frick patented systems the answer to various needs.

Shell-Ice is frozen automatically on stainless-steel tubes, is hard and clear. Preferred in fountains, restaurants, dairies, poultry plants, fisheries, by shippers, etc.

HELP WANTED

Manager of Residential Air Conditioning & Heating Sales

The Trane Company has an immediate opening for a product manager for residential cooling and heating products lines. This is a responsible position at the home office level. Experience is necessary in residential cooling and warm air heating sales and distribution including successful personal selling experience calling on installing outlets. Salary open. Contact G. R. Hassell, Manager Staff Employment, The Trane Company, La Crosse, Wisconsin.

THE MASTER SERVICE MANUALS - - -

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ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other address by actual word count. Please send payment with order.

POSITIONS WANTED

MANUFACTURERS AGENT — Desires two extra lines — 28 years' experience commercial refrigeration, residential and commercial air conditioning and heating. Covering Iowa and adjoining states. Write BOX A6397, Air Conditioning, Heating & Refrigeration News.

POSITIONS AVAILABLE

SHELVING MANUFACTURER wants salesmen with knowledge of grocery trade who will travel, and relocate if necessary in Texas, Tennessee, Ohio or Washington state territories. This is one of the highest paid jobs in the industry. Send resume of previous connections and earnings with first letter. LOZIER-LINE MANUFACTURING CO., 4402 Florence Blvd., Omaha, Nebraska.

PRODUCT ENGINEER with minimum of 2 years' experience as product design or production engineer on refrigeration or air conditioning packaged equipment. Excellent salary plus merit bonus plan with aggressive company. Write Chief Engineer, OAK MACHINERY CORPORATION, 578 Oak St., Copiague, Long Island, N. Y.

SALESMEN ENJOY the wonderful Florida climate and make money at the same time. Also, make $10,000 to $12,000 per year proven figures. Have you ever sold automatic ice machines, or soft drink dispensers, or soft ice cream and milk shake machines, or restaurant equipment? Retail. We handle and arrange all instalment credit, and make all collections. Are you past 40 years of age? Can you prove the above and give satisfactory character references? This is a permanent connection with a well-established firm with well-known lines and well-financed. Write giving personal data, experience, references and photo. WATERS EQUIPMENT CO., INC., P. O. Box 10013, Tampa 9, Florida.

ELECTRICAL AND mechanical design engineers, with two to three years' experience in refrigerator cabinet design or electric motor design, are needed immediately in the Columbus, Ohio Plant. Four new products to be manufactured at this location. For additional information write to: WESTINGHOUSE ELECTRIC CORPORATION, 300 Phillippi Road, Columbus, Ohio.

SERVICE MANAGER wanted by old established air conditioning & heating contractor in Chicago. Must have the ability to manage a well established existing service department covering commercial and industrial installations and maintenance contracts. Reply BOX A6377, Air Conditioning, Heating & Refrigeration News.

EXPERIENCED SERVICE manager to set up and run service department for commercial, industrial air conditioning, refrigeration and heating. Excellent opportunity for a qualified man. This has unlimited potential earnings. We cover the greater Chicago area. Replies must give past experience, education, age, former employers and all other pertinent information. BOX A6385, Air Conditioning, Heating & Refrigeration News.

MANUFACTURERS AGENTS operating in northeastern states, with good lines in refrigeration and restaurant equipment fields, need one or two additional assistants to handle small area with 100 mile radius, either full or part time. Excellent opportunity for right man to break into this desirable field. BOX A6386, Air Conditioning, Heating & Refrigeration News.

WANTED BY central California refrigeration and air conditioning contractor of long standing, journeymen mechanics experienced in market refrigeration, air conditioning, some heating. Send resumes to BOX A6391, Air Conditioning, Heating & Refrigeration News.

ENGINEER EXPERIENCED in commercial refrigerator cabinets desired to assist in design and development section of manufacturer in Southeast. Refrigeration experience not necessary, but sheet metal and cabinet experience desired. Please submit resume of qualifications to BOX A6394, Air Conditioning, Heating & Refrigeration News.

HEATING AND air conditioning engineer wanted to take charge of established fast-growing heating and air conditioning business in Florida. Excellent opportunity for qualified man. Earning potential unlimited. All replies, give resume of experiences, references, recent photo and state salary expected. BOX A6398, Air Conditioning, Heating & Refrigeration News.

MANAGER OF air conditioning engineering to assume management of product design and development of well established eastern manufacturer. Products include packaged equipment, chillers, fan coil units, heat pumps, air handling equipment and some commercial refrigeration. Must have proven technical and administrative ability. Send resume of qualifications to BOX A6399, Air Conditioning, Heating & Refrigeration News.

PRODUCT DESIGN Engineer—To develop, design and conduct cost reduction programs on a complete line of air conditioning products. Products include assemblies from 2 ton through 100 ton including chillers—also, air handling equipment, evaporative condensers and air cooled condensers. Excellent opportunity for rapid advancement for qualified man. Company located in East. Replies will be held in strict confidence. BOX A6400, Air Conditioning, Heating & Refrigeration News.

EQUIPMENT WANTED

WANTED: MANUFACTURERS surplus, outdated or obsolete refrigeration items—expansion & water & shut-off valves, controls, relays, dehydrators, units, tubing, fittings, etc. All sales on a cash closeout basis, large or small quantity. Write or call: COMMERCIAL CONTROLS CO., 257 East 3rd Street, New York 9, New York, ORegon 3-7210.

EQUIPMENT FOR SALE

AJAX ICE Machine parts—We have purchased the inventory of parts, plus all tooling, for the Ajax Electric Iceman, formerly manufactured by Servel, Inc. We are now furnishing replacement parts, for all models including Ajax Pebble Machine. Catalog & prices available. AJAX EQUIPMENT CO., INC., 73 Pine Street, Montclair, N. J.

FOR SALE: Air conditioning 2 hp. hermetic compressors—Model HB200 230 V. 60 cy. 1/phase F-22. Complete with electrical "Power Pack". $79.00 ea. F.O.B. Chicago, Illinois. WALTER W. STARR, 2833 Lincoln Avenue, Chicago 13, Illinois.

Servicing Automobile Air Conditioners

(Vol. 4 — 1959 Models)

BY C. DALE MERICLE

Like the preceding three volumes in this series (which are available in handy manual form), these articles are intended for the *experienced* refrigeration mechanic, not the novice, and are primarily designed for emergency service.

Detailed step-by-step instructions on adjustment and replacement procedures are purposely omitted, partly to discourage the "do-it-yourself" clan and partly because major repair jobs for the most part will be performed by authorized service agencies of the manufacturers without whose cooperation this series could not have been written

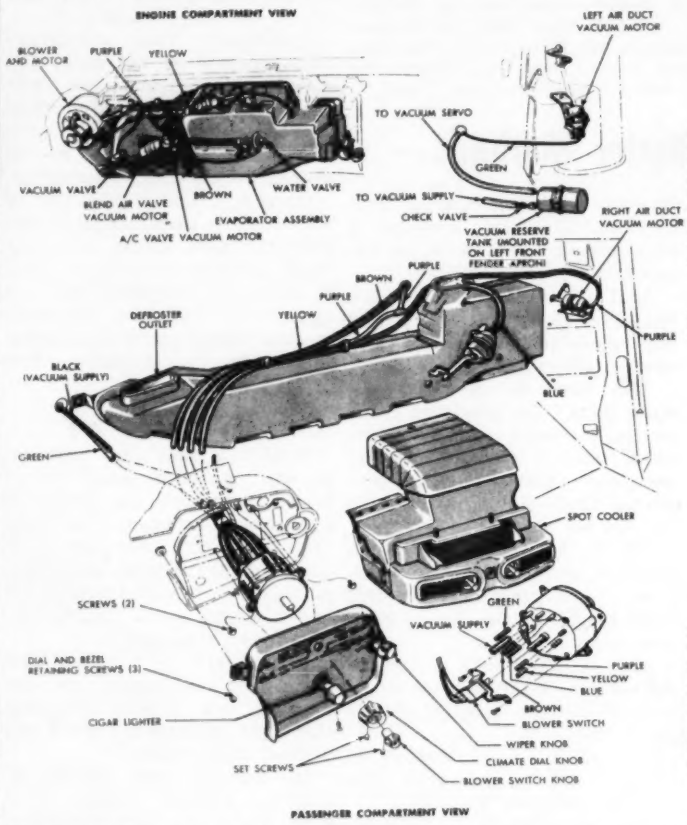


FIG. 1—Partially exploded views from engine compartment and passenger compartment show evaporator assembly, controls, and air outlets of 1959 Mercury Climate Dial built-in system.

MERCURY (1)

M-E-L Div.
Ford Motor Co.
Dearborn, Mich.

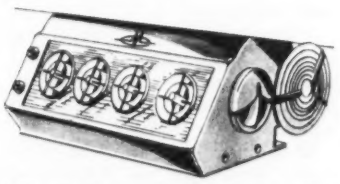


FIG. 2—Mercury 1959 Comfort Cool system suspends evaporator assembly beneath dash.

Two types of air conditioners comprise the 1959 Mercury line: the "Climate Dial" and "Comfort Cool" units.

Both systems employ the same arrangement of compressor, condenser, and receiver, and both are controlled by an adjustable thermostat cycling a magnetic clutch, but the evaporator assemblies differ.

The Climate Dial evaporator (Fig. 1) is built in as part of the car heating system and employs vacuum servo motors to control setting of the thermostat and the various air dampers.

Comfort Cool evaporator assembly is a hang-on type unit suspended beneath the dash (Fig. 2). It operates entirely independently of the car heating system.

Refrigerant-12 is used in both units.

Compressor

Compressor used in the 1959 Mercury systems is mounted on the left cylinder bank. It is driven through a magnetic clutch.

Service valves are mounted on the compressor.

Condenser

Condenser is located in front of the car radiator. A combination receiver and dehydrator is mounted horizontally in front of the condenser near the top.

There is a sight glass in the liquid line at the receiver outlet.

Evaporator Assembly

Climate Dial evaporator assembly is part of the car heating system. The same blower is employed for both heating and cooling. This assembly includes the evaporator coil, expansion valve, thermostat, blower, heater core, hot water valve, air dampers, and vacuum motors. Conditioned air is discharged through two outlets in a "spot cooler" beneath the dash.

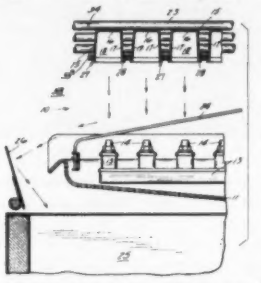
Comfort Cool evaporator assembly, which is attached beneath the dash, includes evaporator, expansion valve, thermostat, blower, and controls. There are four round, adjustable air outlets on the front of the case.

(To Be Continued)

PATENTS

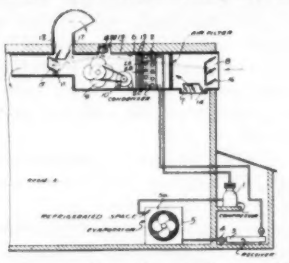
Week of June 30 (Continued)

2,892,323. ICE CUBE MAKING MACHINE. Glenn E. Woodmark and Dwight L. Bollefer, Minneapolis, Minn.



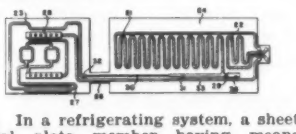
1. In an ice cube making machine, a plurality of laterally spaced inverted open-topped freezing cups adapted to be anchored in upwardly spaced relationship with spray nozzles to receive therefrom a sprayed deposit of solution being frozen in part on the walls of each of said cups and on the ice formed therein until a plurality of complete ice cubes are formed. . . .

2,892,324. REFRIGERATION SYSTEM WITH HEAT RECLAIMING MEANS. Lester K. Quick, Eugene, Ore.



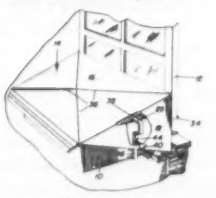
1. In a refrigeration system of the type including, a compressor, operable for compressing a refrigerant which is a gas at normal atmospheric pressure, a condenser in which the gas is condensed to a liquid, means for conducting the refrigerant from the condenser to an evaporator in which the refrigerant is evaporated and heated, means for returning the refrigerant to the compressor. . . .

2,892,325. REFRIGERATING APPARATUS. David J. Timmer, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich.



1. In a refrigerating system, a sheet metal plate member having means forming a refrigerant expansion passage in another portion thereof and means forming an elongated duct extending between said portions of said member and connecting the outlet of said condensing passage to the inlet of said expansion passage, said elongated duct having an end thereof extending to and exposed at an edge part of said plate member. . . .

2,892,424. PROTECTIVE HOOD FOR ROOM AIR CONDITIONERS. Don P. Mondi, New Brunswick, N. J.



1. A protective hood for an air conditioning apparatus and container comprising a shaped integral sheet of material, said sheet having a pair of vertical opposed side portions, a rear portion perpendicular to said side portions, a downwardly sloping top portion between said side portions, and means detachably securing said sheet in spaced relation to said container, said means comprising a strap secured to said sheet and spaced from said top portion, said strap resting on said container and fasteners extending through said sheet clampingly engaging said container.

(To Be Continued)

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

What Was New In Atlantic City

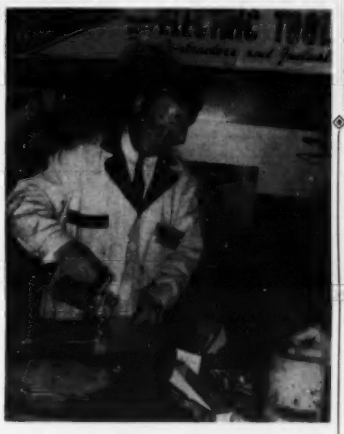
"MICROTRAPS," NEW REFRIGERANT DESICCANT for removing extremely low concentrations of moisture from refrigerants got the big play at the booth of Davison Chemical Div., W. R. Grace & Co. Susan Gilbert holds a jar of the microselective adsorbent material.

HENRY VALVE CO.'s new "Dri-Vue" moisture-liquid indicator that not only changes color as moisture appears but also spells out the words "wet" and "dry" gets a promotional assist from Joy Refowich and Janice Corrado.

MOTH-EATEN MOOSE HEAD attracts passers-by to the Ansul Chemical Co. booth. Smilingly they try to say why they want it—in nine words or less. Winner gets it!—or a $500 U. S. Savings Bond.

AIR DAMPER which has Underwriters' approval as a fire protection item was featured by Imperial Damper Co., and is demonstrated here by Ross T. Paskill (l.) and G. A. Hendrickson.

CUTTING TORCHES for use in piping work was displayed by Universal Cutting & Welding Equipment Co. and draws the attention of Clyde Webb, Ft. Worth, Texas.



PORTABLE SHEAR to cut 16-gauge metal used in air conditioning duct and plenum construction was shown by Milwaukee Electric Tool Corp.

UNIT FLEXIBILITY in compressors was featured in York's display of its "Flex-O-Matic" condensing unit line, available as an integrated unit or with separate condenser sections. Shown in the background is the "Flexo-Rack" which consists of a multiple compressor setup, pre-wired, with liquid connections made, and complete with control panel and timer, if desired.

Many of the photographs appearing on these pages were taken by Austin Jones, Kerotest Mfg. Co., who has been photographing industry shows and other industry events since the 1930's.

BATTERY OPERATED D.C. hermetically sealed refrigeration compressor is item recently introduced to the field by Magna-Kold Co. Charles Pose, The Capson Co., Brooklyn, gets a description of the unit from R. E. Northey, Magna-Kold's president.

NEW TUBE BENDER known as the Wyatt Earp because it is quick on the draw is demonstrated by David Vilas of Imperial Brass Mfg. Co.

IMMEDIATE DELIVERY
YOU KNOW YOU CAN DEPEND ON
THE WHOLESALER
who SELLS and STOCKS
KESCO
THERMAL OVERLOAD PROTECTED
AUTOMATIC CONDENSATE WATER
DISPOSAL PUMPS
WHOLESALERS Write to
KESCO PRODUCTS
Jamaica 13, N. Y.

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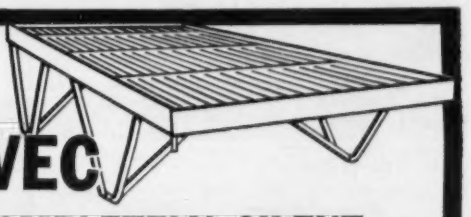
"Short, Short Course in Air Conditioning Fundamentals." By D. C. Schaffer. Mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.
Only 25¢ each.



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THE COMPLETELY SILENT AIR-COOLED CONDENSER...
ENGINEERED BY EDWARDS
• No fans • No maintenance • Low silhouette • No wiring
• No noise • Low initial cost • Negligible roof loads • No water used
Write for Airvec bulletin AV-3
EDWARDS ENGINEERING CORP.
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TEmple 5-2808
"One of the nation's largest manufacturers of Residential and Commercial Boilers, Baseboard and Steel Fin Radiation, Motorized Valves, Air and Water Cooled Refrigerant Condensers."

WANTED
AIR CONDITIONER ENGINEERS
College graduate engineer with minimum of three years experience in Residential Air Conditioning desiring position with diversification in newly established division of fast growing company.
WRITER APPLICATION ENGINEER—to prepare installation, application manuals, instruction and specification sheets for heating; residential, commercial air conditioners and heat pumps.
DEVELOPMENT ENGINEER—design of advance products in residential heat pumps.
APPLICATION ENGINEER—assist in product development and design. Guide field engineers with installation, service, sales of residential air conditioners and heat pumps.
Mail resume direct to:
FEDDERS CORPORATION
57 Tonawanda Street
Buffalo 7, New York
Attention: J. P. Guerra, Engineering Department

Future Shows--

(Concluded from Page 1, Col. 5)

appointment at the quality and character of the attendance.

Those who expressed the greatest feeling of disappointment were primarily manufacturers of unitary equipment. A number of reasons could be pointed up for this attitude.

Scheduling Criticized

The ARI Show was sandwiched between the regular Heating, Air Conditioning & Ventilating Exposition (ASHRAE Show) in February of this year, and the scheduled regional show of the same group scheduled for February, 1960, in Dallas. Many manufacturers of unitary equipment, both in air conditioning and commercial refrigeration, found the early November date too advanced for the showing of new lines or models. And many manufacturers feel that Atlantic City draws a very limited audience from any but the Atlantic Seaboard states.

Those representatives of manufacturers who are now officials of the ARI have taken note of the criticism and trends, and while all the details have not been completed, the following course of action is indicated:

The policy of one biennial national show (once every two years) to be held on alternate years with the ASHRAE shows will be affirmed, with some changes in previous policies on time and place.

All planning will be directed toward holding the show early in the year (probably February). The previously announced decision not to hold the next ARI show until February, 1962, is affirmed.

Re-Location Discussed

Every effort will be made to hold the shows, for a time at least, in some parts of the country other than the usual Midwest or Eastern Seaboard locations.

"We definitely want to get the Exposition to parts of the country not previously covered," said an ARI officer. Among the cities mentioned are New Orleans, St. Louis, Houston, and Kansas City.

"While these cities might give a regional flavor to the Show because of their location, at the same time their somewhat central location would make it easier for those who must come from the far reaches of the country," it was stated.

A survey which ARI took of former exhibitors before the opening of the Atlantic City show indicated a preference for the type of program outlined above.

One reason for holding a once-a-year "big show" is to block out individually promoted regional shows, which all manufacturers realize might easily get out of control.

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"ELECTRICAL CHARACTERISTICS OF PACKAGED AIR CONDITIONING UNITS."

Only 25¢ each.

For your copy, clip this ad and mail with name and address to: Air Conditioning, Heating & Refrigeration News. 450 W. Fort, Detroit 26, Mich.

Surface Combustion Purchase--

(Concluded from Page 1, Col. 4)

ations in Columbus would not be affected in any way as a result of the transaction.

"Everyone connected with Janitrol—employes, distributors and dealers, and suppliers—will benefit because we are now a vital part of an even bigger, stronger, more versatile company," he added.

Surface is a designer and producer of industrial furnaces and other heating equipment for all major industries as well as the Kathabar dehumidification systems. The Janitrol heating and air conditioning products for residential, commercial, and industrial use, and Janitrol aircraft and missile equipment represent other major areas of the Surface operations.

Sales of Surface, including Janitrol, have averaged approximately $45 million a year in the last five years, it was noted. Net profits have averaged in excess of $2 million in the same period. Harris estimated that the sales of the combined organization in 1960 should approximate $120 million.

Harris pointed out that the joining of Surface-Janitrol and Midland-Ross means a generally broader base of consolidated operations—a larger organization, new engineering talent, and an increased corporate stability.

The company will now have nearly 6,000 employes of whom approximately 500 are engineering and technical personnel. It will comprise 14 plants with more than 2,000,000 sq. ft. of manufacturing space.

Harris noted that this was a key move in the long-range diversification program of the company. The first step was made in December, 1957, with the merger of the Midland Steel Products Co. of Cleveland and the J. O. Ross Engineering Corp. of New York to form Midland-Ross Corp.

"We consider the acquisition of Surface, including Janitrol, as another major step in our diversification program," Harris said. "Less than five years ago, virtually 100% of sales of Midland Steel Products Co. were concentrated in the automotive field.

"We have had no intention of relinquishing our strong position in this industry, but we have felt that the stability of our corporation would be greatly strengthened by increasing the breadth of our operations through expansion into other growth industries."

"With the joining of Surface, our automotive business will represent less than 40% of our volume."

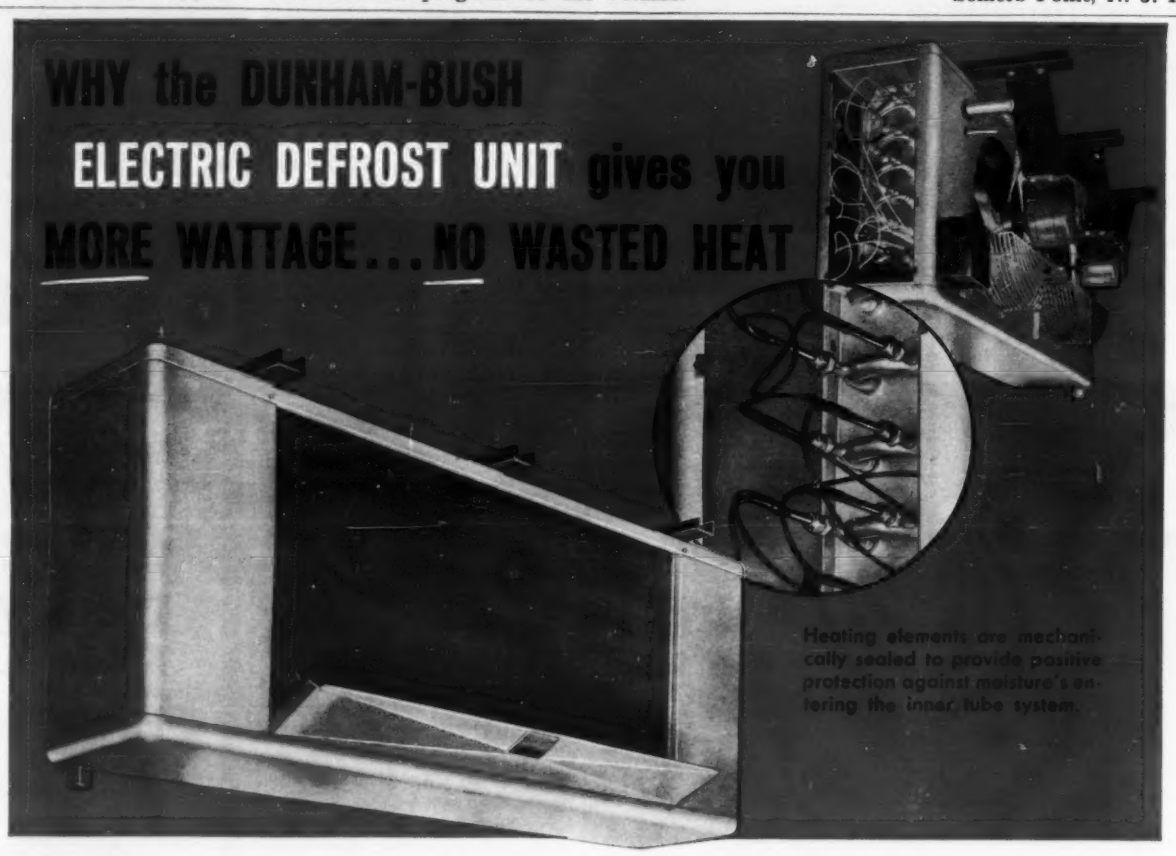
Mr. K Wants Choppers Air Conditioned

WASHINGTON, D. C. — A Soviet Embassy official indicated recently that the Russians would like to buy two or three of the type of American helicopters which took the fancy of Prime Minister Khrushchev during his visit with President Eisenhower.

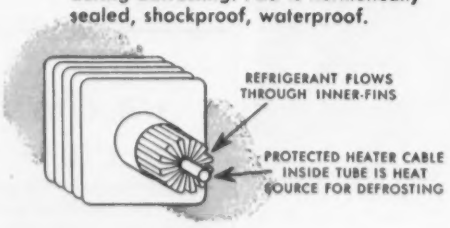
The Russians reportedly want the choppers they purchase to have the same "extra" features as do the helicopters used by Mr. Eisenhower. These features include air conditioning.

Lionel Maggenti Dies

PHILADELPHIA — Lionel Maggenti, a retired plumbing and heating contractor, who was active here for more than 40 years, died at his home in Somers Point, N. J. He was 63.


WHY the DUNHAM-BUSH
ELECTRIC DEFROST UNIT gives you
MORE WATTAGE...NO WASTED HEAT
Heating elements are mechanically sealed to provide positive protection against moisture's entering the inner tube system.

Rubber, electrical resistive heating pad in drain pan delivers quick, safe heat that prevents refreezing of water during defrosting. Pad is hermetically sealed, shockproof, waterproof.



Precisely because of its Inner-Fin coil construction—a feature offered only by Dunham-Bush—the 'ED' low temperature unit provides more wattage than competitive units, and *wastes no heat at all!*

Total heater wattage in 'ED' models ranges from 1900 to 10,900. Inner-Fin permits defrosting from *the inside*. And the increased surface that results from compact Inner-Fin construction ensures more rapid heat distribution, for faster defrosting with minimal room temperature rise.

Like all other Dunham-Bush products, the 'ED' is composed of equipment engineered for lasting, efficient performance. For example, its evaporator unit has copper-sheathed electric heating elements . . . heavy-duty motors with low temperature capability . . . drain pan electric heating pad . . . and an internally mounted superheater allowing full utilization of the evaporator surface.

The standard 'ED' system is capable of low temperature applications ranging from—40°F to 30°F, and can use either R-12 or R-22 refrigerant. Special systems (requiring factory selection) are available for temperatures as low as —80°F. Companion EDA systems, which use direct expansion ammonia refrigerant, are also available. Write for further information.

Dunham-Bush, Inc.

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